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LECTURES
ON THE
THEORY AND PRACTICE OF MEDICINE;

NOW IN COURSE OF DELIVERY AT THE
THEATRE OF ANATOMY AND MEDICINE, WEBB-STREET, SOUTHWARK.

BY

MARSHALL HALL, M.D., F.R.S. L. & E., &c., &c.

INFLAMMATION (continued):—*Explanation of various phenomena of adhesive inflammation. Experiments of Mr. Travers. Effects of inflammation considered in the cellular and compound tissues; in parenchymatous substance; cutaneous texture; in arteries, veins, and absorbents. Experiments of Dr. Jones. Effects of ligature on the arteries; compared with its effects on veins. Conditions of the economy which modify inflammation; examples drawn from rubeola, scarlatina, small-pox, and typhus fever. Influence of inflammation on the system. Distinction between bronchitis and phthisis. Tendency of inflammation to extend.*

GENTLEMEN:—*Facts*,—facts illustrative of *principles*,—facts teaching a lesson in *practice*, are still what I am most anxious to bring before you. If I store your minds with these, I shall feel that, when my words and phrases are forgotten, you will still retain the *substance* of these Lectures, and that what you so retain will serve you in your examinations, and in your subsequent professional career. In the cases which I introduced to your notice in beginning the subject of inflammation, of abscess in the liver, of ligatured intestine, &c., this idea was beautifully exemplified. I will again advert to abscess in the liver. It enlarges; it proceeds to evacuate itself; this may be effected, externally, in the hypochondrium; internally, into the intestine; or, through the lungs, into the bronchia. In the first case, adhesive inflammation unites the two contiguous portions of peritoneum, and the subsequent ulcerative process pierces through these two folds of membrane with the intervening layer of albumino-fibrine, and then through the external integuments. The cavity of the abdomen is protected and preserved from an effusion of pus, which would immediately induce a terrible and fatal peritonitis. In the second case, similar phenomena occur, and the abscess finds an issue into the intestine, the abdomen being still protected and preserved as before. In the third case, the two contiguous peritoneal surfaces first, and then the two adjacent pleural surfaces, unite by albumino-fibrous adhesions; and, lastly, the ulcerative process proceeds to open a way for the pus through these adherent membranes, the intervening diaphragm, the pulmonary tissue, and the bronchial parietes, and the pus is eventually expectorated, the cavity of the abdomen, and that of the pleura, being equally preserved.

These facts are, indeed, wonderful enough. Still more wonderful are the results of the following experiments, which I quote from Mr. Travers' interesting volume on "Injuries of the Intestine," pp. 98; 342:—

"A ligature of thin packthread was firmly tied around the duodenum of a dog, so as completely to obstruct it. The ends of the string were cut off and the part returned. The abdominal wound was then closed, and the animal expressed no sign of suffering when the operation was concluded. On the following day he was frequently sick, and vomited some milk which had been given him. His respiration was hurried. Third day, his sickness continued, and he vomited some bilious fluid. Fifth day, he passed a copious stool of the same appearance as the fluid discharged by vomiting. His sickness from this time ceased, and his breathing was natural. He took bread and milk, and drank abundantly of water. Seventh day, he had three similar evacuations, and appeared well, eating animal food freely. Tenth day, he had a natural solid stool of a dark colour. On the fifteenth day, his cure being established, he was killed.

"*Examination.*—The lacteal system was well displayed, the animal having fed re-

cently. A portion of omentum connected to the duodenum was lying within the wound, and the folds contiguous to the strictured intestine adhered to it at several points. A slight circumferential depression was observed in the duodenum. The gut was then carefully laid open; the villi appeared turgid with chyle. This surface was more vascular, and of a deeper colour than usual. A transverse fissure marked the seat of the ligature. The edges of the sections were distinctly everted, and the appearance corresponded with that of the union by suture, hereafter to be described."

The appearances subsequent to this experiment are represented in the subjoined sketch:—

"Having made an opening into the abdomen of a dog, and brought out a fold of ileon, it was strangulated by a ligature applied a little above the angle. The strangulated piece was then cut off below it, and the cut extremities, connected by the ligature, were carefully put back into the belly. The wound was sewed up, and the animal did not appear to suffer materially. Second day. He was sick, vomited bile, but drank water and a little milk. Third day. Continued much the same. Fourth day. Passed a solid stool, and from this time recovered his looks and spirits. After a month, having perfectly recovered, he was shot.

"*Examination.*—The external wound was healed. The abdomen presented no appearance of disease, and but few adhesions of the peritoneum. The ileon lay upon the vertebræ. At the internal angle the sides adhered to each other. The opposite was closed by adhesions to the omentum and neighbouring intestine. Upon carefully laying open the tube, it appeared that the ligature and the ends of the gut had been discharged through the canal. At one point the line of union was scarcely completed; and there appeared a little cyst, like an abscess, communicating with the tube, in which the tied ends of the gut had been lodged previously to their being voided."

The appearances so very exactly correspond with those arising from the union after the ligature of the single tube, as completely to establish the identity of the processes.

a, line of the ligature.
b, portion of ileon.

"It appeared, from this experiment, that where a fold was included in a stricture, the canal was susceptible of restoration, if left in contiguity with the peritoneal surface. The operation of the stricture upon the coats of the bowel was the same; and the mode of union, judging from the appearances, the same as in the preceding experiment. The greater angularity observed at the point of union, and the little circumscribed cyst containing the slough and ligature, which was necessary to their expulsion, form no exception to this remark. This last appearance was so far obliterated as but faintly to indicate what had taken place."

Precisely similar events took place in Ramdohr's well-known operation in a case of strangulated hernia. Having excised the sphacelated portion, he inserted the upper sound extremity within the lower, confining them closely by a suture in that position. In this state he reduced the gut, connecting it by the end of the suture to the wound. The matters soon passed *per anum*, and the woman recovered. A year afterwards she died of a pleurisy. Ramdohr examined the united intestine, which he found adhering to the parietes. Heister, to whom he presented it, informs us, that he preserved it in his museum to convince the incredulous.

Similar phenomena are also observed in the human subject, in cases of intus-susceptio, as I shall have occasion to observe when I come to treat of diseases of the intestines.

In all these cases the contiguous points of serous membrane unite by the effusion of albumino-fibrine; the interior tissues, with the mucous membrane, are severed by the ulcerative process. The cavity of the peritoneum is guarded from the irruption of the

fæcal matters by adhesive inflammation, whilst the canal of the intestine is preserved entire by the ulcerative.

Now, let us suppose these properties of the serous and mucous membranes reversed. Every inflammation of the former would tend to ulceration and abscess; every inflammation of the latter, to close a canal.

But I must proceed to describe the effects of inflammation in the other tissues; and, first, in the cellular tissue. This in general has been already detailed; but there is a special inflammation of the cellular membrane which I must notice distinctly, although briefly, in this place. It is *inflammatory anasarca*. It results from exposure to damp and cold, and is a sequela of scarlatina. It terminates, not in the effusion of lymph, or of pus, but of serum, into the meshes or cells of this membrane. It is sometimes conjoined with serous effusion within the head, thorax, or abdomen. It requires, and bears, the full detraction of blood.

I have several remarks to make upon inflammation occurring in tissues compounded of the serous, mucous, and cellular. 1. *Adhesions* usually occur on their *exterior* surface; when such a surface is inflamed, it irritates the *contiguous* serous membrane, and both pours out lymph itself, and induces the effusion of lymph from that membrane; mutual adhesion is the consequence, effected through the medium of this albumino-fibrine. 2. *Ulcerations*, on the contrary, usually occur in the *interior* surface of such composite tissues; the mucous membrane first loses its firmess and thickness, and then suffers a loss of substance by ulceration. 3. In cases of *perforation*, ulceration usually proceeds from within; they also generally occur under peculiar states of the constitution opposed to adhesive inflammation, and disposed to sloughing, as typhus. It is on account of this latter circumstance that we see perforation of the intestine in typhus, whilst such an event in phthisis is so rare, although ulceration of Peyer's glands occur equally in both. The perpetual movement of the lung prevents such effectual adhesions of the two contiguous portions of the pleura, as might prevent the perforation of this membrane which therefore occasionally occurs in phthisis.

The *parenchymatous substance* of organs is apt to be softened by acute, and indurated by chronic, inflammation; to become the seat of abscess, of gangrene. Softening, induration, abscess, are frequently seen in the brain; abscess in the liver; gangrene in the lungs.

Of the *fibrous tissues*, tendon is apt to slough; cartilage and ligament to ulcerate.

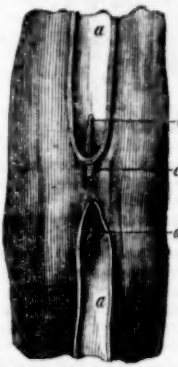
Caries and necrosis are well-known frequent occurrences in bone.

The *cutaneous textures* resemble, in their disposition to ulceration, &c., the internal mucous linings of canals, to which they give origin. Hordeolum, furunculus, paronychia, anthrax, erysipelas, afford specimens of the disposition to partial and incomplete suppuration, sloughing, or gangrene, which characterize inflammation of these textures. The various cutaneous diseases illustrate the other forms which inflammation assumes when it affects the skin.

In connexion with difference of texture, I have another interesting and important subject to bring before you, the difference of inflammation in relation to *arteries*, *veins*, and *absorbents*.

Arteries are little disposed to inflame. If you divide an artery by the scalpel, or if you partially divide it by a ligature, it is the divided border which inflames; not, as in veins, its internal membrane. A more practically interesting subject cannot be brought before you. I will, therefore illustrate it by two diagrams taken from the admirable work of Dr. Jones.

The first represents the femoral artery of a dog nine days after its division by incision.



a. a. portions of the femoral artery, above and below the ligature.

b. d. coagula passing into the cavity of the artery.

c. clot of fibrine.

Both ends of the artery are *retracted* in length, and *contracted* in circumference; they are closed by a minute clot of blood, unadherent, except at the point immediately in contact with the cut extremities, which have united by adhesive inflammation, i. e., by the effusion of albumino-fibrine, or coagulable lymph, which is adherent and, doubtless, organised.

The second plate represents the carotid artery of a dog twelve days after the application of a ligature.

Precisely similar processes have taken place. A ligature always divides the internal and middle tunics of the artery; a fact ascertained by Dessault, Dr. J. Thomson,

and Dr. Jones. In this manner the case of the ligature becomes similar to that of division by incision. *Retraction* cannot take place, but *contraction* does. The cut surfaces unite by adhesive inflammation; the same minute coagula are seen within the vessel, but unadherent, and extending, as in this representation, to the point from which a branch is given off, if this be near the place of ligature.

a. a. carotid artery.
b. a gland.
c, c. muscles of the neck.
d. point of ligature.
f. e. clots of blood.
g. transverse artery of neck.

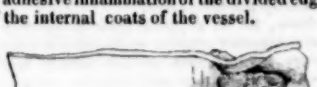
In all these cases there is no inflammation of the internal tunic of the artery,—no *arteritis*.

Dupuytren has, however, traced the disease termed gangrena senilis, to an inflammation of the arteries.

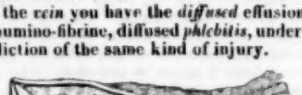
There is, then, little disposition to arteritis. Arteries are apt to become ossified in the aged, but they are little disposed to inflammation, even in the young.

How different is the pathological disposition or character of veins. How disasterous are operations on these vessels apt to be; and what deplorable results would ensue, after amputations, for example, if these properties of arteries and veins were reversed.

Compare the figures which I have given of a divided or tied artery, with figures of ligatured femoral artery and vein, in man, taken from the interesting essay of Mr. Travers. In the *artery*, you have the results of adhesive inflammation of the divided edges of the internal coats of the vessel.



In the *vein* you have the *diffused* effusion of albumino-fibrine, diffused *phlebitis*, under the infliction of the same kind of injury.



Now observe this other sketch:—

a. b. internal puckered coats of vein.
c. coagulable lymph.

It represents the effects of a ligature applied to the jugular vein of a horse. There is no division of the internal coats of the vessel; the whole of the parietes are puckered longitudinally on being brought together. There is a *large* clot of blood *filling* the veins above. But there is no union, no adhesive inflammation, to repair the injury or close the vessel. Nor is there, in this instance, any diffused, adhesive, but eventually destructive, phlebitis.

But, in many instances, a destructive phle-

bitis runs along the vein, towards the heart, inducing typhoid fever, and a speedily fatal event. This has occurred in the human subject, after venesection, the ligature of veins, wounds, especially of the head, and parturition.

In other instances, another and a different state of things takes place. Instead of diffused phlebitis, with typhoid symptoms, we have a more confined and local phlebitis, with suppurations equally circumscribed.

Inflammation of the lymphatic vessels is, like phlebitis, apt to be diffused. The morbid action extends along their course towards the thoracic duct and the heart, and would, probably, prove as fatal in its results as phlebitis, if it did not meet with a barrier in the glands of the system, situated in the neck, the axilla, the groin, &c. These glands guard the inlets into the great cavities; they frequently suppurate; and what havoc would ensue were they *within*, instead of being *without*,—Poupart's ligament, for example.

Inflammation of the absorbents generally terminates by resolution. In one instance, however, it passed on to suppuration, and many abscesses formed in the course of the lymphatic vessels, as they ascended from the heel (which was the seat of ulcer from chilblain, the cause of the inflammation), upwards along the thigh.

The lymphatic glands, in the neck, the axilla, the groin, &c., are frequently the seat of inflammation from similar causes, viz., an ulcer on the head, the hand, the foot, the penis; and this inflammation frequently passes on to suppuration.

How happy is it, that the true capillary vessels, the special seat of every inflammation, have not the properties of the veins or the lymphatics.

The phenomena of inflammation are, perhaps, most distinctly traced in the eye. Constituted by numerous serous, fibrous, mucous and other textures, it presents inflammation under all the modifications which difference of texture produces. It is also an organ belonging equally to the province of the physician and the surgeon. The works of Saunders and of Wardrop will be studied with great advantage, in this point of view.

The eye is an interesting organ under another point of view, in its relation to inflammation: the eye is very apt to suffer from mere debility. Dogs, fed upon indigestible food by M. Magendie, and bled to a state of exhaustion by myself, became affected with inflammation, tending to ulceration; and I have seen a similar event from debility in the human subject. In an experiment, in which M. Magendie divided the fifth pair of nerves within the cranium, the eye underwent similar destructive changes. The eye suffers from destructive inflammation in phlebitis, and is frequently the seat of ence phalosis.

Having thus traced the effects of textures upon inflammation, I will now bring before you another subject,—that of

VIII. *Inflammation modified by Conditions of the General System.*

How important this point is, will be made apparent to you, by a fact ascertained by M. Louis. It is, that pleuritis is never fatal unless the system be previously deranged. In every case of pleuritis examined post-mortem, M. Louis has found, that there either existed some derangement of the system previously to the attack, or that there co-existed some disease. What a bright ray of light is thus thrown upon the *prognosis* in pleurisy. And, if this be true in Paris, where, I presume, this disease is usually treated with inefficient measures, how much more true must it be in England, where we combat the disease with far greater activity.

In a variety of instances we observe that inflammation is much modified in its character and effects by different conditions of the general system. In *rubeola*, the true inflammatory, or *phlogistic* diathesis, prevails; the larynx and trachea are inflamed, and pour out albumino-fibrine; the bronchia and pleura are affected by such inflammation as is the usual result of exposure to damp or cold. In *scarlatina*, the fauces, nares, and pharynx, are inflamed, with a disposition to ulceration and sloughing; the character of the general fever, and of the local inflammation, is frequently typhoid. After the fever has terminated, the general diathesis becomes phlogistic, as we observe in the character of the acute anasarca, and pains of the joints, which occur as sequelæ in this disease.

I have described the series of phenomena which occur in the variolous pustule. The description belongs to that form of the disease termed *distinct*. In the *confluent variola* a very different series of events takes place, under the influence of a typhoid state of the system; the papulæ are less hard and elevated; the serum and pus are less distinctly characterised, and resemble an undefined, and sometimes bloody, sanies; the progress, the circular and orbicular forms, the periods, the termination of the eruption, are less marked, less distinct; and there is a greater disposition to slough, and, consequently, to scars. The influence of varied states of the system on the character of local inflammation, cannot be more vividly illustrated than by the contrast of the pustules in distinct and confluent variola.

But the influence of constitutional condition is extremely obvious in typhus itself. The disposition to softening of the organs, to sloughing of the integuments, and to the effusion of a sanguineous serum, is extremely marked. It is from this disposition that the ulceration of Peyer's glands is apt

not to be conjoined with the effusion of lymph, but with the formation of slough, leading to the fatal perforation of the ileum, occasionally observed in this terrible disease.

Furunculus and paronychia, in the young, and carbuncle, in later years, are all illustrations of the influence of constitutional diathesis, upon local inflammation. The same remark may be applied to erysipelas, in its phlegmonous and gangrenous forms, in the former of which there are frequently extensive, diffused, and deep-seated suppuration and sloughing; and, in the latter, actual mortification of the whole of the part, or limb, involved in the disease.

But, if the condition of the system modifies the processes of inflammation, it is also true that inflammation modifies the state of the system; and especially inflammation of the different textures. I will now, therefore, briefly state the circumstances of

IX. *The influence of Inflammation on the System.*

I shall illustrate this subject by a reference to this influence of inflammation in—

1. *The Serous,*
2. *The Mucous,* and
3. *The Compound Tissues.*

In inflammation of the *serous* membranes, there are, in general,—1, little heat of surface; 2, little frequency of the pulse; 3, little muscular debility; 4, little tendency to delirium; and, on the other hand, there are,—5, acute pain; 6, great power to bear the loss of blood; 7, great disposition to buff and cupping of the blood itself. How different from *fever.*

Let these phenomena be compared with those of inflammation of the *mucous* membranes: in this there is far less pain, far less power of bearing the detraction of blood, and far less disposition to buff and cupping of the blood.

There is, however, an exception to this general rule in regard to the influence of inflammation of the mucous membranes, in the case of *croup,* whether common or rubeolous. In this disease there is great power of bearing the loss of blood.

In inflammation of the parenchymatous and compound tissues, there is an intermediate condition of things, differing with the organ affected.

Another point of interest is—

X. *The Diffusion of Inflammation.*

I may, in this place, again quote a remark of M. Louis, equally extraordinary for its originality and its practical utility.

Bronchitis is always *diffused*—diffused through *both* lungs, at their *lower part*—even in its commencement. *Incipient* tubercles are usually confined to *one* lung, at its *apex.* Suppose a case, then, in which you have to give an opinion, whether there be incipient phthisis, or mere bronchitis—a fearful question. Examine the chest; if it be bronchitis, you will find mucous rattles at the lower posterior part of the thorax, on both sides, with a general healthy sound on percussion; in incipient phthisis you will find dull sound, and rattles under one clavicle. No words can convey to you the importance of this remark. You must *feel* it, in order to comprehend it aright.

In general, inflammation is by no means always confined to one part, or organ.

Eruptive inflammation is very apt to extend from the cutaneous to the mucous tissues, and especially to those of the throat; *scarlatina* affects the conjunctiva, the posterior nares, the fauces, the pharynx, &c.; *rubeola,* the conjunctiva, the anterior nares, the larynx, the trachea, the bronchia, &c.

We frequently observe *diffused* inflammation of the *mucous* membranes, those of the air-passages, and of the digestive organs, being simultaneously or consecutively affected; this is particularly the case with erythematous and aphthous inflammation.

Sometimes, too, though less frequently, several of the *serous* membranes, especially the pleura, the pericardium, and the peritoneum, are simultaneously affected with inflammation, with the effusion of *serum, lymph,* or *sanguineous* fluid.

Pus is frequently found in various organs, and in several parts of those organs at the same time; as in the integuments, the eye, the brain, the lungs, the liver, &c., in cases of *phlebitis* succeeding operations, accidents, parturition, &c.

Pus may exist in the *veins,* in connection with an abscess, or from phlebitis; and it may exist in the *lymphatics,* either in connection with an abscess, or from inflammation of these vessels. These facts are particularly observed in *puerperal* metritis, or metro-peritonitis.

I have thus, Gentlemen, brought under your review a series of *facts* and *principles* which, as they are facts, and as the principles are based upon them, time cannot change. New experiments and observations may add to their number, but cannot render them less valuable in themselves. The facts detailed in the works of Sydenham, yes, and of Hippocrates, are as true and as valuable now, as in the days when they were committed to us by those writers. It has been said that medicine is an uncertain science, *ars conjecturalis.* This is because medical writers and practitioners have deluded themselves, have allowed themselves to be led away by hypotheses, by *ignes fatui,* such as *Hahnemannism* and *Mesmerism.* Alas! for medicine, when such trumpery is allowed to pollute the temple which ought to be devoted to the cultivation of a pure, a cautious, I had almost said, a sceptical observation. Observation is everything in medicine,—and observation is a difficult

thing. Read,—read the admirable Essay of M. Louis on this subject. It will teach you *how* to observe. It will teach you then, to analyze, to compare, and to number the facts observed, and to deduce inferences and laws from them, which must henceforth constitute the whole science of medicine. Then, and not till then, will medicine be stable; its base being broad, like that of the pyramids, it will, like them, endure for ever.

But, to accomplish all this, we must be careful not to allow ourselves to be beguiled by the imagined reliefs obtained by one class of patients, and the imagined pains experienced by another. Read the account of cures by means of painted tobacco-pipes, by the late Dr. Haygarth. Hysteric patients are sad deceivers; they will make some believe that they can see with their fingers.

Gentlemen, all this is not observation, is not medicine. Learn, then, to observe; take M. Louis for your guide; visit, if possible, *his* hospital, and see how carefully, how cautiously, he interrogates, and observes, and notes. You will see how his facts and his deductions deserve your confidence. How beautiful is medicine in his hands, compared with the thing of the same name in the hands of those who, in the present day, are either making us smile at the *infinite littleness*, or wonder at the *very enormity*, of the doses of medicine which they are giving to their credulous patients.

But I have been led from my proper subject in making these remarks; in my next lecture I propose to bring before you the cases of *irritation* and *congestion*, as distinguished from inflammation, and to pass on to consider the *treatment* of inflammation, and the use of inflammation as *a cure* for other diseases.

LECTURES
ON
MATERIA MEDICA AND THERAPEUTICS;
NOW IN COURSE OF DELIVERY
AT THE
WINDMILL-STREET SCHOOL OF MEDICINE
BY
GEORGE G. SIGMOND, M.D.

TONICS:—*Early definition of this term. They refer chiefly to effects on the muscular system. The theory of their action not well understood. Effects which they produce on the animal economy described; these sometimes differ with the season. Antiperiodicity of some tonics considered. The theory of periodicity discussed. Necessity of knowing the precise value of each tonic; overdoses injudicious. Tonics divided into organic and inorganic; examples of the latter. Iron; its utility and properties examined; first used in the form of rust; preparations of, in the New Pharmacopœia.*

GENTLEMEN:—The arrangement of medicinal agents must always be a matter of very considerable difficulty; the substances which we employ do not bear such striking affinities as to make any classification perfect. It is sufficient for our purpose if we embrace, under particular divisions, those drugs which exert nearly a similar influence upon the human economy. I shall, therefore, associate together the two classes which Murray has formed of agents which exercise a general stimulant operation on the system, and which, whilst they are less diffusible than narcotics, are slower and more durable in their operation. I shall consider, under the general head of tonics, the most important of those therapeutic agents which he has ranked in that class, or in that of astringent. I shall only dwell, however, upon those substances which give strength to the whole system, reserving our inquiry into the action of astringents upon particular organs, or upon the various tissues, until a future period.

It was a received opinion of some of the ancient physicians, that muscular strength, and the general vigour of the human body, were entirely dependent upon the tension of certain fibres, and that their relaxation produced debility; and hence the terms *tone* and *atony* were employed; the former to express the due capability of the organs of the body to perform healthily their functions; and the latter, the absence of the necessary strength. The human frame was often compared to one of the stringed musical instruments of antiquity; and many expressions, borrowed from the uses of these causes of harmony, were introduced into common, and even into medical language. The solids of the human body were said to be composed of the finest threads, or fibres, and that a fluid, to which the name of animal spirits, or nervous fluid, was given, was prepared and conveyed to them. Boerhaave speaks of the diseases "fibræ laxæ et debilis;" Baglivi, Bellini, Sanctorius, and a large proportion of those physicians who believed that the general laws which are observed to govern inanimate matter, were applicable to the human body, and who introduced mechanics as explanatory of physiology, believed that relaxation, and a want of elasticity, were the cause of debility; and one of the aphorisms of Boerhaave was to show,—"What methods must be taken to remedy too great elasticity, or weakness, in the smallest fibres; what must be done when the fibres are too fragile, or easily broken; and what, when they are too much contracted, or else distracted, by elongation." Our English

dispensatories, at the earliest period, ranked such agents under the head of corroborant; for instance, it is said, "Whatsoever acts as a stimulus, and crisps and corrugates the fibres into a more compacted tone, will remove such weakness and increase strength; and as, also, too much moisture may contribute to such relaxation, what has no other quality but absorbing and drying up such superfluous humidity, may deserve, though accidentally, to come under such denomination."

I shall point out to your notice those substances, which produce gradual, yet permanent, changes upon the system, without attempting to enter upon any consideration of the theory of their action; for I believe it is not yet sufficiently matured; they seem, uniformly, to act primarily upon the stomach, and hence to be conveyed to the various tissues and organs. How they influence the living principle, I am not prepared to say; but they quickly seem to produce an increased action in the circulation, marked by a firmer state of the pulse, which is occasionally rendered more frequent. The muscular system, then, seems to derive fresh power; the excretions become more uniformly natural, and there is firmness given to the nervous system. From their action upon the digestive organs, it would appear that the more nearly tonic medicines approximate to the aliment which would be most easily digested, and be more decidedly nutritious, the greater the influence they possess. They should never be of a nature to produce any inordinate excitement, for the reaction, or exhaustion, that would follow upon the stimulus, would be more hurtful than any beneficial influence they could exert. It is a slow, steady, and uniform operation that is required; and the greater the delicacy of constitution for which you are called on to prescribe, the more careful must you be in the quality, quantity, and mode of preparation, of your tonic. The stage of the disease, the state of the functions, and even the season of the year, must be considered before you select your remedy. Iron, of such value in some cases, is productive of mischief if the pulse be full, if any tendency to inflammatory action is present; cinchona, or its alkali, quinine, will prove a dangerous remedy if the vessels of the brain are more than usually full, and, particularly, if venous retardation be present; arsenic, to which we look with such confidence in the intermittent fevers of the Autumn, and in periodic affections during the Winter months, is inferior in value to cinchona, or to carbonate of iron, in the Spring of the year. As Foderé has justly observed, arsenic is an autumnal medicine; but it may prove deleterious in the Spring. That the barks of trees should have more efficacy in the Autumn, when the changes have taken place in vegetable circulation and secretion, is not, to us, a matter of much surprise; but that these substances should, in the Spring, act upon the system in so marked a manner, is somewhat unaccountable; but that such is the case has been very generally observed. Some of these remedies enter into the circulation, and are capable of being detected by their usual tests; others, again, have not been discovered. Iron is soon received into the blood, and may easily be recognised; but the Peruvian bark, though it has been continued for some length of time, has not been found. Sometimes diminished susceptibility of the excretory organs follows quickly upon the use of tonics. At others, again, there is found an increased action, almost amounting to violent diarrhœa; and this is oftentimes evident upon the administration of cinchona, and seems to contra-indicate its use; but this more generally occurs where proper steps have not been previously taken to remove, by gentle laxatives, any sordes that may have accumulated during the disordered action in the alimentary canal; and sometimes it is a salutary effort of nature, which, if checked, may afterwards prove an abundant source of distress and harassment to the patient, and of difficulty and doubt to the practitioner.

One of the striking characteristics of this class of medicines is the power that some of them possess of preventing the recurrence, at fixed intervals, of particular states of the body; and from which circumstance they have acquired the quaint, but expressive, name of antiperiodics. Amongst the unexplained phenomena attendant upon the morbid conditions of the living being, is that peculiar tendency to the return of certain marked symptoms, for several days, at the same hour in the day at which they at first developed themselves; thus, an aguish fever coming on daily, will almost always commence its attack very early in the morning; whilst the tertian, which recurs at an interval of about forty-eight hours, for the most part, begins at noon; and the quartan which exhibits itself after an interval of about 72 hours, is generally present much later in the day.

Several of the affections of the nervous system have a strong tendency to become periodic. The painful disorders called neuralgia, epilepsy, St. Vitus' dance, or chorea, and lunacy, have their precise intermissions and their paroxysms so evident, as to have engaged, at a very early period, the attention of medical observers; but the causes that produce this singular habit of the constitution have been very uselessly sought for. That in many of the functions of the organs periodicity may be acquired, daily experience teaches us. There is no difficulty in so regulating the excretions both of the intestines and of the bladder, that the action shall only recur at expected moments;

but that the whole system should be called into morbid states, as in intermittent fever, must remain a subject for inquiry and investigation. But over this striking habit the tonics, both metallic and vegetable, exercise a peculiar influence, restraining, if taken during the intervals, the worst symptoms of the paroxysms, and gradually preventing their recurrence. It is probable that all the febrile diseases have their stated moments of aggravation; and there are few of them that do not, towards evening, exhibit a degree of exacerbation, during which tonics do mischief, even if, in the remission, they have been found serviceable; the proper time, therefore, of employing them, is of greater consequence to us than the inquiry into the causes of the periodic return; contenting ourselves for this silence by the remarks on this subject of Sydenham:—"I do not desire to be called a philosopher; and for such as conceive they have a right to this title, and upon this account may possibly censure me for not having attempted to dive into these mysteries, I advise them to try their faculties in accounting for the various works of Nature that everywhere surround us, before they go about to teach others. I would fain know why a horse comes to his full growth in seven years, a man in twenty-one; why some plants usually flower in May, others in June; not to mention other innumerable effects whose causes are as hard to be discovered: now, if the learned ingenuously confess their ignorance on these points, I see no reason why I should be censured for being silent in a matter not less obscure, and, perhaps, wholly inscrutable; especially as I am persuaded that Nature proceeds in this case, as in all others, with a certain regularity and uniformity, the matter of tertians and quartans being not less subject to, and governed by, the laws of Nature than all other kinds of bodies are."

In thus confessing our ignorance, I still must think that this subject is most worthy of our deepest investigation; the periodical returns of certain actions are of infinite importance in the regulation of our therapeutic agents. As I shall have occasion hereafter to point out that, even in the action of those drugs which induce the intestinal canal to evacuate its contents, a knowledge is required of the habitual tendency in each individual, either by constant attention or by custom, to have a periodic discharge of the fæcal contents; and that, in the case of many diseases, a neglect of obtaining this information will produce uncertainty and failure in the expected operation of Nature, assisted by art.

A knowledge of the precise value of each tonic medicine is of the deepest importance; and you will often feel, in the long and lingering illness which is consequent upon acute disease, the necessity of being familiar with the powers of each therapeutic agent which may have the power of renovating and restoring health. There are precise stages in many diseases in which you must suspend the administration of a remedy which becomes stimulant, where it had previously been merely giving strength; for, if you do not watch with caution, you will have a state of collapse infinitely more mischievous than the disease; and, in many febrile conditions, a relapse is much more to be dreaded than the stages which at first excited the greatest apprehension. It is, I fear, the fashion of the day to give too large doses of tonic medicines, notwithstanding some very admirable cautions of the most practical physicians, amongst whom I must rank Dr. Graves, who, in a very excellent article, entitled, "Observations on the Treatment of various Diseases," which is to be read in the "Dublin Journal" for May, 1832, speaking of the large doses of carbonate of iron which have been had recourse to by some of our most eminent medical men, says,—"I have examined this subject, in a practical point of view, with great attention, and think that what is true concerning carbonate of iron, applies to most tonic medicines. In fact, we may consider it as a general rule, that tonics are rarely indicated where moderate doses do not effect the desired purposes; this applies more particularly to the stronger doses, such as the salts of iron, of arsenic, and of quinine. I can scarcely conceive a case possible in which a judicious physician will ever find it necessary, for instance, to give more than ten grains of sulphate of quinine in a day; and yet much larger doses are not unusual here and elsewhere." I am much pleased to find such an authority for my own opinion and practice; and, when I read, as I have done, of one-ounce doses of carbonate of iron, and of a case of a child nine years of age, in which four pounds and six ounces were given in five weeks, for chorea, I am not surprised that violent cephalgia and intermittent fever, exasperating the original disease, should supervene; and the great source of consolation is, that the child should survive. Fortunately a large portion of the medicine must pass away completely unchanged; and this, I believe, is often the case where enormous doses are administered.

I shall subdivide this class of medicines into those which are obtained from inorganic matter, and those which are produced by organic matter; under the first division may be ranged many of the metals very conveniently, such as iron, arsenic, copper, lead, silver, bismuth; nor do I see why mercury may not be placed amongst tonic substances, and thus enable me to take, at an early period, a view of one of the most extraordinary agents we possess. Amongst the organised bodies, I shall consider the

product of the fermentation of vegetables, the various alcoholic and vinous fluids, and then proceed to the barks and woods of plants. Under the vegetable tonics will be found a variety of very important objects, which possess bitterness, astringency, and aroma, and a peculiar principle upon which their action seems to depend; cinchona, cascarilla, calumbo, cusparia, quassia, gentiana, canella among the bitters, amomum, piper, anthemis, capsicum, and several of the aromatics, will be associated together; and such substances will be brought before you as may be employed in cases of debility, or diminished power of the system.

IRON.

The tonic to which I shall now invite your consideration, is that metal so important in the sciences and in arts, so indispensable to the happiness of man,—so necessary to him, that society scarcely exists in a state of civilization without it, and which was one of the earliest medicines of which we have a tradition,—I mean iron. I must refer you for a brief narrative of its value to mankind to the work of that great and distinguished chemist Fourcroy. He has, in one of those eloquent and beautiful discourses which adorn the learned works of our scientific neighbours, and which render their volumes so attractive and easy of comprehension, and so much more inviting to the reader, than the dry and monotonous details of our own countrymen, pointed out, in forcible language, the uses of the metal; the necessity there is that the philosopher, the geometer, the navigator, the astronomer, and the physician, should each inquire into the history of this substance; and, combining the varied information each possesses, contribute his assistance to improve still further our knowledge. He has himself drawn up a monographic history of this metal, with a precision and method which are as clear and concise as they are instructive, and worthy of imitation. It forms the most complete narrative of the information we possess relating to that mineral, upon which the fortune and station of the different nations established on the face of the earth depend, and from which every individual in society derives both the immediate and the distant sources of his happiness, his comfort, and his health. We require an acquaintance with the physical properties of the metal and its ores; the phenomena and results of its combinations with the principal element of the atmospheric air, by which its oxidation occurs; its union with hydrogen, with carbon, with phosphorus, with sulphur, and with the other metallic bodies; its power upon water; its multiplied effects upon the acids, upon saline combinations; the unions it enters into; the compounds which it forms; the colours which it communicates and assumes; the power it gives to the earths, the alkalies, and the salts; and its varied action upon the organs and tissues of the animal frame.

Iron is universally diffused over the surface of the globe; the forms of its ores, their colour, their texture, and their composition, are very singularly varied; five principal states have been acknowledged,—that of native metal; that of its alloys; its combination with combustible bodies; its salts. Native iron was, for a long period, supposed to be masses left by the inhabitants of former ages, who had been working at this metal; and its existence was a sort of unresolved problem amongst naturalists. On an analysis of various specimens, made by Mr. Howard, it was found that they all contained an alloy of nickel, and this led to the idea that these masses are meteoric; since it is found that those bodies which have apparently fallen from some æthereal system, all contain nickel; some imagine these to be detached from the moon; others, that they have formed in the atmosphere, from some causes yet unknown.

You will find, in the magnificent collection of mineralogy and secondary fossils in the British Museum, deposited, in the first case, in the Long Gallery, some singular specimens of native iron, found in insulated masses, and disseminated in meteoric stones; amongst these a large piece, detached from the celebrated mass of iron-stone which was discovered by Pallas, in Siberia, on the summit of a hill, between Ababansk and Belskor Ostrog, where it was considered by the Tartars as a sacred relic; the mass which I saw in the mineralogical collection at St. Petersburg, originally weighed about 1680 pounds. Amongst the meteoric stones which you will also observe, there is a fragment of the stone which was seen to fall November 7th, 1492, at Alsace, in the presence of the Emperor Maximilian, then King of the Romans, and of his whole army, then on the point of engaging in battle with the French army; this mass weighed 270 pounds. It was preserved in the cathedral of Ensisheim, till the beginning of the French Revolution, when it was conveyed to the public library at Colmar. There is likewise a fragment of a mass, weighing 56 pounds, which fell near Wold Cottage, in Yorkshire, and I believe is the one alluded to by Mr. Brande, in his lecture on iron, in THE LANCET, in 1827. There is likewise a specimen in the collection of the Royal Institution, brought from India, weighing about 25 pounds. The varieties of the ores of this metal may be referred to fifteen different species,—native iron, arseniated carburet, sulphuret, arseniated sulphuret, four oxides of iron, sulphate, phosphate, tungstate, carbonate, prussiate, and quarizose iron.

I must refer you, for the different speci-

means of these ores of iron, to the British Museum; you will find the collection so admirably arranged, as to form a complete illustration of that portion of the science of mineralogy which it is necessary for you to become acquainted with. The system adopted is that of Berzelius, founded upon the electro-chemical theory, and the doctrine of definite proportions, as developed by him, in a memoir read before the Royal Academy of Sciences. This splendid collection is well adapted to assist you in the pursuit of your studies, and is, in every respect, worthy the highest commendations, as a scientific exhibition, and as an ornament of the country. In the sixth case you will find the sulphurets of iron, or common pyrites, from several localities. In the fourteenth and fifteenth cases are the oxides of iron; amongst these the specular oxide of iron, the specimens from Elba, displaying their beautiful iridescence and play of colours; those from the volcanoes of Vesuvius and Strombole, in large laminar crystals, appearing like polished steel. In the sixteenth case are the hydrous oxides of iron, or brown iron-stone; amongst which are some remarkable varieties, such as the micaceous, of a blood-red colour; the shining, brownish-black variety, used as hair-powder by the natives of the neighbourhood of the Great River, in South Africa. In the fifty-eighth case are some beautiful specimens of sulphate of iron, in fine large rhomboidal crystals, from Bodenmais, in Bavaria, and in stalactic, fibrous forms, such as those which come from the Rammelsberg, in the Hartz Mountains. There are likewise carbonates, phosphates, arseniates, titonates of iron, and most of the volcanic and specular iron with glassy fracture. Amongst the organo-chemical, or such mineralized bodies as are composed after the manner of organic bodies, you will observe the oxalate of iron, now called Humboldite, formerly resinous iron. All these present to the eye a rich variety, and they would afford an ample field for inquiry by those who would wish to become intimately acquainted with the natural history of one of the most important objects of creation, and which appears so liberally and so variously distributed in organic and inorganic matter.

These varieties require particular modes and processes for their analysis, and their treatment forms a portion of chemistry which is denominated metallurgy. The first object for medical consideration is the oxidation of iron, as the mode of administration which must originally have suggested itself, was in the form of rust. Common observation points out that of all the metals with which we are acquainted, that which is most immediately acted on by the atmospheric air is iron; that it breaks gradually into a yellow powder, which is well known to us under the familiar appellation of rust; that the largest masses are, by a gradual decomposition, entirely destroyed; that they waste away, as it were, in the centre; that they mingle with the earth, whose appearance and colour the powder assumes. This insinuates itself into combination with the bodies with which it comes in contact, and thus iron enters into the constitution of so large a proportion of all the objects which belong to our globe. A small quantity of water most materially assists in promoting this decomposition. The spontaneous oxidation of iron in the atmospheric air was made use of by the earlier alchemists for the purpose of preparing a medicine, to which they gave the name of the aperitive saffron of Mars; for this divinity was chosen as the tutelary genius of this metal, at a time when the planetary influence over the objects of nature was considered a subject of the deepest importance. The plan pursued by the earlier adepts, to obtain a strengthening medicine, was to expose iron filings in new vessels of earth, or of glass, to the dew of May; the water precipitated from the air during the refrigeration of the night, and the action of the atmospheric oxygen, produced an oxide which gradually absorbed the carbonic acid of the atmosphere, which became a yellow carbonate, which was much employed.

Melampus, the oldest Greek physician whose name has been handed down to us, and whose fame has been celebrated in a book, now lost, by the poet Hesiod, has the reputation of having first administered the rust of iron. Iphicles, one of the warriors engaged in the Argonautic expedition, was childless; and, as this was ascribed to disordered function, Melampus administered the rust of iron, infused in wine, for ten days, which appears to have remedied the cause of complaint. This is the first instance we have upon record of the employment of a mineral medicine, and has, accordingly, been commented on by various authors. We find Dioscorides and Galen recommending the rust of iron, as restraining fluor albus, and preventing conception. Wine, in which a red-hot iron has been immersed, is also spoken of as a cure for dysentery, for affections of the spleen, for cholera. Its external application, mixed with vinegar, is said likewise to be useful in chilblains; it is also ordered to give firmness to the gums, and likewise to be used as an ointment for the gout. Pliny, at a later period, mentions only one mode of administering it internally; and that is, by quenching hot iron in water, for dysentery; and Celsus prescribes it, in the same way, to prevent enlargement of the spleen. Iron is, perhaps, the only metal which possesses no deleterious effect upon the human body; for, although the sulphate of iron exerts a deleterious agency, this is owing rather to the acid than to the metal. The tincture of the muriate or sesquichloride has occa-

sioned death. Of this Dr. Combe, of Leith, furnished Dr. Christison with an instructive example:—A gardener swallowed, one morning, about ano unce and a half of the tincture, instead of whisky. Violent pain in the throat and stomach, tension, and contraction of the epigastrium, and nausea, immediately followed; afterwards coldness of the skin and feebleness of the pulse were remarked; and then vomiting of an inky fluid, with, subsequently, profuse vomiting of mucus and blood, and, also, bloody stools under the use of laxatives. For some days he was in a very precarious state, but he then began to rally, and in three weeks resumed his occupation. In two weeks more, however, Dr. Combe found him emaciated, cadaverous in appearance, and labouring under pains of the stomach, costiveness, and thirst, in which state he lingered for five days more and died. In the dead body there was found great thickening towards the pylorus, a cicatrized patch there three inches long, and two inches broad, and another large patch of inflammatory redness, surrounded by a white border. The preparation contains a third of its volume of hydrochloric acid, and a tenth of its weight of oxide of iron.

Among the new names introduced into the New Pharmacopœia, will be found the sesquioxide of iron; it is the subcarbonate of former times, and was originally called the prepared rust of iron; it is formed of four pounds of sulphate of iron, four pounds two ounces of carbonate of soda, and boiling water, six gallons. The sulphate of iron and the carbonate of soda are to be dissolved separately in three gallons of water, then the liquors, being mixed together, are set by, that the powder may subside; lastly, the supernatant liquor is poured off, and that precipitated in water is washed and dried. During this process the carbonic acid leaves the soda and unites itself to the oxide of iron, forming a carbonate of iron, which, from its insolubility, is precipitated in the fluid, whilst the soda now disengaged combines with the sulphuric acid set at liberty, and the resulting compound, sulphate of soda, remains in solution. During the washing which is required to disengage the sulphate of soda, the protoxide of iron acquires oxygen from the atmospheric air, and gets rid of carbonic acid, and thus becomes a sesquioxide of iron; it still, however, retains a small portion of carbonic acid. The powder is of a reddish-brown colour, has little or no smell, is somewhat styptic to the taste; it is insoluble in water, but is totally dissolved by hydrochloric acid; it is decomposed by heat, and becomes the black oxide of the metal. The pilulæ ferri compositæ are prepared nearly in the same manner; the sulphate of soda is not got rid of; but as the quantity directed to be made is small, this is but of little consequence; myrrh, powdered, is added, and treacle. for the purpose of forming the ingredients into pills; these are favourites with many practitioners in cases in which iron is to be administered, but they are very often so long kept in the shops as to be perfectly hard and dry; sometimes they have been found to pass through the intestinal canal precisely in the same form and size in which they were administered; and, occasionally, they have been retained so long as to have accumulated, and to be productive of considerable mischief.

FATAL CASES OF LITHOTRITY.

To the Editor of THE LANCET.

SIR,—As I think it right that our profession should be informed of the failures, as well as the triumphs of lithotrity, I should feel obliged if you would record the following cases in your valuable Journal, in addition to the successful ones which you were so kind as to insert some time back. I have the honour to be, Sir, yours very faithfully,

W. JEAFFRESON, Surgeon.

Framlingham, ——

CASE 1.—In December, 1833, Mr. Smith, miller, of Framlingham, aged 68, applied for relief, having suffered the symptoms of stone in the bladder for several years, accompanied by the most irritable urethra I ever witnessed. On the 24th, Mr. King, in my presence, detected and grasped a calculus of rather more than an inch in diameter, which was crushed without difficulty; but, from the morbidly-sensible urethra, and enlarged prostate, there was more and louder expression of suffering than usual, which was repeated at every subsequent sitting, although the manipulations were conducted with the greatest tenderness. This induced us, after nine sittings, which gave us over a drachm of detritus, to prevail on him to place himself under the care of Mr. Costello, who, on the 11th of November, extended his ride from Ipswich, and in the presence of several of my surgical friends, very dexterously seized and crushed several portions of calculus; this was attended with the same loud expression of pain. January, 1835, he went to town, and was under the care of Mr. Costello for two months, during which time he submitted to twenty-two sittings, and returned, bringing with him an additional ʒjv., viij. grs. of detritus, relieved of his urgent symptoms, and with an assurance from Mr. C. that his bladder was free from calculus. He remained in tolerable comfort till about the second week in October, when he assured me his sufferings were as severe as ever, and urged me to examine the bladder, which I did, but failed in detecting calculus.

I therefore had recourse to soothing injections, opiates, local bleedings, and fomentations, with complete rest. On the 26th Mr. Costello came down, repeated the examination, and detected a calculus, which, from its size, he at once declared to be a fresh formation since he last sounded him in town; but from the irritable state of the bladder he was unable to grasp it; he prescribed alkalies and opiates, a repetition of the local bleeding, and fomentations, with opiate suppositories; a steady perseverance in which, together with daily injecting the bladder with a gradually-increased quantity of warm water, so much lessened the irritation as to make it retain half a pint, when I sent his son to town to urge Mr. Costello down to seize the favourable opportunity to repeat the operation; but, unfortunately, his (Mr. C.'s) professional engagements did not admit of this, and soon after there was a return and aggravation of the painful irritation of the bladder, which prevented my ever doing more than mitigate the sufferings by opiates.

He lingered in this state until the 30th of September, 1836, when he died; and, at my urgent request, I was permitted to examine the bladder, when I found its parietes generally much thickened and inflamed, and its mucous membranes sphacelated in many places; the prostate gland was much enlarged, and immediately behind its posterior lobe the bladder contained two irregular portions of calculus weighing 3iv., xxiv. grs.

Case 2.—Feb. 5th, 1836, Mr. Miller, farmer, of Framlingham, aged 55, requested my attendance, having suffered severe symptoms of stone for several years, with occasional retention of urine. He had enlarged prostate, but having injected the bladder, I, without much difficulty, seized and crushed a calculus, measuring about eight lines in diameter, and another portion somewhat less; but the examination led me to believe that there were several calculi in the bladder. On the 8th, 11th, 14th, and 17th, I continued to crush several portions, measuring from three to five lines, at each sitting, but still had the sensation of a larger stone, which I could not succeed in grasping, in consequence of the bladder being unable to retain more than a few ounces of water; on the 20th I injected nearly half a pint, and was able to grasp a calculus measuring nearly four inches in diameter; which, after twenty powerful blows of the hammer, I crushed through its entire substance; these blows produced no pain or even uneasiness to the patient, and I left him in high spirits at the success of the operation; indeed, I never have had much pain complained of from *crushing* the stone; but on the following day he suffered severe pain and irritation from a large fragment being firmly fixed in the urethra, about an inch posterior to the glans; this, after some minutes of careful manipulation, I crushed with the forceps before described, but I had for many days after this to contend with all the difficulty of stricture, which gave way to local bleeding, fomentations, aperients, and complete rest. I could only obtain a passage for the urine by adopting the plan advised by Mr. Liston, of leaving a small catheter in the bladder for twenty-four hours, and afterwards allowing the urethra an interval of rest, gradually introducing one of a full size. This plan was most satisfactory, and enabled me, on the 21st of March, to introduce a fair-sized silver catheter; and having, at every introduction, injected the bladder with warm water, it was at length able to retain half a pint. I now earnestly entreated him to submit to lithotomy, telling him that the hazard of the operation was probably diminished by the breaking up of the large calculus; to this he would not give his consent because determined to abide the result of the new operation. I, therefore, having obtained the smallest-sized adult percussor, crushed several fragments, and left him in tolerable comfort. I repeated the operation at frequent, but irregular, intervals, according to the state of the bladder, from this date, till the 21st of September, including, from the first, sixty sittings, on which evening a large fragment was fixed in the membranous part of the urethra, causing great pain and complete obstruction to the passage of the urine, making my patient very urgent for relief. I, therefore, grasped it with the forceps, which Mr. Costello sent, instead of the percussor which I wished to use in Levell's case, but after making what I considered prudent traction without effect, I wished to disengage the instrument, and introduce a forceps that would enable me to crush the fragment, but the forceps was so imbedded in the substance of the stone that I could not disengage it; I, therefore, offered to make an incision in perineo to enable me to remove the fragments; but this the poor fellow positively refused to submit to, hoping that this difficulty would be conquered as others had been; after waiting for some minutes, I again used moderate traction, and extracted the fragment, but with the painful conviction that the lining membrane of the urethra had sustained greater injury than at any former operation.

22. Another portion of calculus descended to the point of the urethra which had been so much irritated the day before, but which I extracted with great relief; I immediately applied leeches along the under surface of the urethra. On the 23rd, 25th, and 26th, I was obliged to repeat this operation, from the descent of other fragments; this was done with scarcely any pain, and each time with instant relief. At 3 o'clock on the morning of the 28th, being obliged to

go to town, I repeated my visit, extracted what I hoped was the last portion, introduced a full-sized gum-elastic catheter, and left it in the bladder; but my friend Dr. Salmon, who kindly superintended during my absence, observed incipient sphacelus on the skin covering the under surface of the urethra, which made progress, and he died on the evening of the 1st of October.

The fatal termination of this case is very instructive, and I hope that its publication may prevent others from falling into a similar misfortune.

Case 4.—June 17, 1836, I was requested to meet in consultation three medical gentlemen, on the case of Mr. Fisher, farmer, of Laxfield, who had for many years suffered the symptoms of stone in the bladder. On a careful examination, the presence of stone was readily ascertained; and I was requested to treat Mr. Fisher by lithotrity. Accordingly, on the 20th, I crushed a calculus measuring six lines in diameter, and one other smaller portion.

21. Repeated the operation, when I distinctly felt several calculi, varying, as was conceived when they came within the grasp of the percussor, from five to nine lines in diameter. These I continued to crush three and four times at each sitting, repeated twice or thrice in the week, till September 25th, when he had submitted to thirty-five sittings, and ℥vj. ℈i. of detritus had been removed; but, although he could move about with rather more comfort, and all sensation of a foreign body in the bladder was removed, yet the viscus did not lose its irritability; there was more pain than usual after the removal of a calculus, and the mucous deposit in the urine had not much diminished; not more than ℥i. of the detritus escaped during the intervals of the operations; the rest was brought away enclosed in the instrument. Not being able, this day, to detect more calculus in the bladder, I attributed the existing symptoms to irritation of the prostate; which, at an early period of the treatment, I had discovered to be considerably enlarged. I, therefore, prescribed local bleeding, by leeches to the perineum, opiates, enemata, tepid hip-bath, and complete rest.

Being, about this time, obliged to go to town, I was gratified, on my return, to find Mr. F. in every respect more comfortable; and that he had begun to get out on the farm; but this amendment continued only a short time. On November 10th, I was again requested to visit him; when, on carefully injecting and examining the bladder, I could detect no stone. This I repeated on the 24th, with the same results. We then agreed to persevere steadily in the soothing plan, and to leave the parts at rest for a time; and, although I continued to meet Mr. Lanchester in consultation about once in the week, I did not repeat the examination till December 19th; and, as this gave the same result, we directed all our attention to soothing the irritable bladder. As this plan was not productive of the relief I wished, we requested Mr. King to meet us again on the 23rd of February, 1837; when, after a most careful examination, that gentleman could detect no stone.

Soon after this the patient had a severe return of suffering, being affected with almost constant pain in the region of the bladder, and being obliged to pass urine every twenty minutes. On July 24th, he became easy, but had a weak frequent pulse, with other symptoms of exhaustion, and died at eight o'clock the same evening.

On the evening of the 25th, after much persuasion, I prevailed on Mrs. Fisher to allow me to examine the bladder, and that only. It did not contain a single particle of calculus, nor was the prostate much enlarged. The lining membrane of the bladder was ulcerated through one part for about the size of a small horse-bean; but, exterior to this, the muscular and cellular tissues put on, through their whole extent, the same dark appearance which a bowel presents after many hours strangulation.

Observations.—The appearance of the bladder after death, together with that which poor Smith's bladder presented, leads me to the opinion that it is only the mucous coat of the bladder which has the power of resisting the irritating and disorganising properties of the urine; and that, when this is destroyed, even to a small extent, unaccompanied by external wound, and free outlet for the urine, the other tissues gradually imbibe this fluid, and it soon exerts on them its disorganising effects.

I am more inclined to this opinion from never having, at any one of the sittings to which Mr. Fisher submitted, experienced bleeding, or any other unfavourable circumstance, to give me the idea that the bladder had at any time received injury during the operations; therefore, in any future case, accompanied by such deposit in the urine as to lead me to apprehend ulceration of the lining membrane of the bladder, I would advise my patient to submit to lithotomy.

ON THE

NATURE AND EXTERMINATION OF HYDROPHOBIA.

By FRANCIS EAGLE, *Esq., Surgeon, London.*

"——— Go thy ways,
And if (as I believe) thy vein be good,
The world will find thee after many days."
SOUTHEY.

It has always appeared to me a very extraordinary opinion, that any particular disease, now in existence, should have had merely an individual and solitary origin, and thus constantly, more or less, prevailing, should continue to propagate itself from generation to generation. It has been supposed that from some occult origin of this kind, all the morbid poisons have arisen; and that, therefore, having been once let loose upon mankind their extermination is now impossible. If this opinion were correct, it would be manifestly absurd to attempt to dive into causes which are now no longer in existence; and we must, consequently, despair of ever ascertaining the precise nature of hydrophobia, syphilis, small-pox, cow-pox, measles, scarlatina, &c., and simply content ourselves with the simple knowledge, that they depend upon "specific contagion." Such an opinion, shutting out all stimulus in the investigation of their nature, should be based upon very powerful facts and reasoning; instead of which, if we examine for ourselves, we shall find, that so far from this being the case, the opinion is formed entirely from negative premises; namely, that because such a disease was not recorded before a certain period, therefore it did not exist; and, secondly, that the causes which originally met together and produced this result, are no longer in existence; that the cause is obliterated, and the effect only remains.

1st. *That because such a disease was not previously recorded, therefore it did not exist.*

Nothing, I submit, can be more inconclusive than this method of reasoning; for it not only presumes that all the then existing diseases were known, but also that they were recorded, and puts out of consideration the fact, that almost every country has its peculiar diseases. The silence of Moses, and other early historians, down to Homer, does not prove that hydrophobia did not exist, although it is extremely probable that it did not, as the same localities now are also free from the disease, and the earlier inhabitants of the earth, unquestionably, existed in a different temperature from that in which the disease is now most commonly found to prevail.

2ndly. *That the causes which originally met together and produced this result are no longer in existence.*

Here is another entirely gratuitous assumption, ridiculously absurd; since, without knowing what those causes were or are, we at once pronounce them no longer in existence; this, too, in face of the fact, that in our own day we have seen, in the case of the Egyptian ophthalmy, a foreign poison originated from causes which rarely occur; and although introduced both by the French and British armies, into their respective countries, still the poison has long since ceased to exist: it most naturally and philosophically expired with the causes which gave it birth. Much, and very interesting matter on this subject, might be afforded to the governments of different countries upon the philosophy of the Quarantine Laws, which are a disgrace to the age in which we live,—laws of vast importance to every kingdom, but peculiarly so to this country, whose mercantile transactions are carried on in every part of the habitable world, and to whom the annual cost of maintaining quarantine may be estimated at an enormous sum, perhaps millions; for all the expenses of a vessel under quarantine are going on to no useful purpose.

"Peculiar poisons, having their origins in peculiar countries and climates, cease to exist when removed from the causes which give them birth." It is so with the animal kingdom; it is the same with the vegetable kingdom; it is also the same with the morbid kingdom; such is the philosophy of the Egyptian ophthalmy; such is the plague, yellow, and other fevers. The same causes which produce a disease are requisite for its continual propagation; therefore, neither the plague, the Egyptian ophthalmy, or yellow fever, could ever exist to any extent in this country, while the habits of the people continue in the present advanced stage of civilization, even let the quarantine be entirely superseded. The case of cow-pox is no proof against this argument, for it is a disease, the propagation of which has become a national object and study, and is also constantly reproduced in this country. Professor Magendie, speaking of the Quarantine Laws, observes,—"It is an affecting circumstance, Gentlemen, to see the commercial relations of a great country depending upon such errors, especially when the government have ample means of obtaining every information on the subject, and purging the sanatory code of the absurdities by which it is disfigured."

Waiving for the present the question of the contagiousness of lepra, typhus fever, yellow fever, the plague, and the cholera morbus,—diseases which are subject to the Quarantine Laws,—the point of importance to be decided is,—Whether such diseases (even if they are contagious in the country which gives them birth) do not lose that property

when transported to a different country or climate? Whether they, in short, do not, like the Egyptian ophthalmy, cease with the causes which called them into existence? The mere circumstance, even if it were true, of the introduction of syphilis into this country from America, by Columbus, or of the small-pox from Arabia, would be inefficient to its continual propagation, unless it was constantly reproduced; and, if this beautiful "law of Nature" did not exist, the whole world would now be one "universal hospital," (or, every morbid poison, gathering fresh malignity, and a more extensive sphere of operation, would have long since depopulated the world,) and in Great Britain, all the diseases which have from time to time been introduced would now be in existence; but the truth is, that the causes which produced the "sweating sickness" having ceased to exist, the disease itself has disappeared; the causes which produced the plague are removed, so is the effect; the causes which originally produced the Egyptian ophthalmy not existing in this country, neither did the effect continue to propagate itself; but the causes which originally produced cow-pox, small-pox, hydrophobia, measles, scarlatina, varicella, syphilis, and the plague (in Egypt and Turkey) are still in existence, so also are the effects. Not only, then, have different countries their peculiar diseases, but even different counties in the same kingdom, as cow-pox, bronchocele, stone, &c. I hope, ere long, to show what is the true and real nature of all morbid poisons, especially small-pox and cow-pox, the cause of which diseases was never even hinted at, so far as I have seen, by any author, from Dr. Jenner to the present day. The effects were observed, but the causes which originated the disease were, and still are, as far as current knowledge upon the subject is concerned, involved in the most perfect obscurity. To the medical philosopher, then, a wide field opens for investigation, for if we are ignorant of the causes which produce a disease, it is clearly impossible for us to decide, whether those causes may not be avoided, and the respective disease be consequently exterminated.

For my own part I will confess, that I entertain a strong inclination to the belief, that most, if not all, of the morbid poisons, may be, if not entirely prevented, yet invariably reduced to a few isolated cases; and such an opinion from one who has studied, not unsuccessfully, the nature of morbid poisons, is surely as philosophical as the opinion of those who confess their entire ignorance of the matter, and whose answer to the question, "What is the cause of small-pox?" is, "specific contagion." What the cause of the "specific contagion" may be, the only thing worth knowing, is a question never entertained; and even with respect to the nature of specific contagion, I trust I shall be able to show that the most absurd notions still prevail, undoubted and unenquired into; neither is it by any means certain, that the Egyptian plague is an exception to the above opinion; for the true nature of this disease seems at present unknown, and as it (the effect) has ceased to appear in this country, we are justified in believing that the causes are also no longer in existence. It is most probable, then, by pursuing the investigation, we shall find that amongst the physical changes which have since occurred in this nation, the cause, or causes, of plague, are to be found, and having discovered what those causes are, or were, their removal in Egypt or Turkey, would, in all common probability and fair presumption, be followed by a removal of the effect, or, in other words, of the plague itself.

Having previously observed (Lancet, July 15th), the remarkable coincidence in nature between hysteria and hydrophobia, it will, I think, be found an additional illustration of the truth of those observations, if we extend the investigation to other animals, whose physical formation protects them from such an extent of venereal madness as I have presumed hydrophobia to be.

Notwithstanding this, it appears to be the fact, that all animals while labouring under the œstrum veneris, undergo a marked deviation from their common and usual habits; the timid become bold; the bold fierce; and although generally regarding man with fear, yet, at this period, they will approach him with comparative indifference, and even proceed boldly to attack him.

It is to the male animal especially that these remarks seem to apply: the horse, the bull, the boar, and ram, &c., &c., manifest a degree of "madness" from which their respective females appear to be comparatively free; the old proverb of "mad as a March hare," is in strict accordance with truth and sound philosophy, and is clearly to be attributed to the œstrum veneris; even the human animal, whose "organ of amativeness" continues in operation all the year, is in some degree influenced by the peculiar temperature and season, and March is scarcely more famed for its "mad hares," than the "merry month of May" is for its heroines; that venereal madness, therefore, terminating in hydrophobia, *never* originates in herbivorous animals, is a proposition which, notwithstanding their physical formation, I am not prepared to accede to: but even should they originate the disease, there is comparatively little to fear as to its extensive propagation; for, *in the first place*, it is not yet proved that hydrophobia is communicable by herbivorous animals; *and, in the second*, their weapons of offence and defence are more particularly their horns and their heels, while the "carnivorous," making comparatively little use of these, confine

themselves principally to the use of the jaws and teeth, to the action of "biting."

Man, without doubt, the most perfect in physical formation of all animals, does, under very peculiar circumstances, originate hydrophobia; of this fact there are several well-authenticated instances; and it is important to observe, that all the cases of which I have read, bear marked reference to the state of the sexual system; they all occur after the period of puberty, and, for the most part, in individuals removed from "conjugal enjoyment;" some of the cases on record were consequences of violent outrage upon the chastity of females; others, of the sudden separation of man and wife, under circumstances of high excitement; these causes, however, owing to the greater development of brain in the human subject, have a prior tendency to produce cerebral disease, rather than hydrophobic; and it was long ago observed by Galen, that both diseases have co-existed; that in cases of spontaneous hydrophobia, the patients have become both hydrophobic and phrenetic, and died in that state; the reason why hysteria and spontaneous human hydrophobia, more commonly affects the brain, and less commonly some other parts of the body, will be explained when I speak of the "law" which governs the actions of all morbid poisons.

The predisposing causes of hydrophobia are physical formation, the absence of perspiration, and the absence of the vesiculæ seminales. The utility and importance of the perspirable system must be self-evident to any one who will take the trouble to observe the changes going on in his own body, —in the summer, streaming with perspiration; in the winter, except under high excitement, it becomes so much diminished as to be insensible; in the one, ridding the body of superfluous heat, in the other, husbanding it with the most rigid economy, and thus man is, above all other animals, capable of existing in every quarter of the globe: it constitutes the critical outlet, by which fevers of all kinds commonly terminate, from ague, to rheumatism, to synocha, and typhus, and is at the same time the salutary medium of Nature in curing a simple catarrh, or an incipient phthisis pulmonalis.

The utility of the vesiculæ seminales is of considerable magnitude in the human body, for under venereal excitement, consequent upon the period of puberty, the secretion of semen, forms one method of relief to the overloaded genital system, and if not required by sexual intercourse, becomes deposited in the vesiculæ seminales, whence it is frequently evacuated in the "gonorrhœa dormientium:" to such an extent does this discharge take place in some individuals, as to appear to answer the same purposes in the male that the catamenia does in the female, whether we regard its causes or effects, and is thus wisely constituted by Nature as a physical aid, in enabling man to maintain that decorous line of conduct which should ever be the distinguishing feature of the intellectual kingdom, in *contradistinction* to the brutal impulse of animal sensuality.

The exciting causes are the œstrum veneris, influenced by the period of puberty and atmospheric changes, most commonly, perhaps, from cold to hot. While, therefore, this disease exists more or less throughout the whole year, there are particular seasons which materially dispose to its production; the months of May and September, especially the former, offer, perhaps, the most cases of spontaneous hydrophobia; but this depends in a measure whether it be an early or late season; for the same cause which retards the vegetable kingdom has the same effect on the animal; and spring, the period of the year when all nature is beauty, life, and activity, animates in like manner the whole animal world, from an oyster to the "lords of the creation;" even the simple oyster, "strong" with the œstrum veneris, becomes "unseasonable," frequently "poisonous;" game is forbidden by law, and around every animal is thrown some protecting or remedying power, except in the dog, who most the "friend of man," is less *properly attended* to than any other domesticated animal. Spring, however, is not the period, or the only period, of the "œstrum veneris" of *all* animals.

It therefore appears, that although other causes may contribute to the production of this disease, whatever those causes may be, they manifest their action through the medium of the sexual system, or, in other words, by exciting "venereal irritation:" that it is not a consequence of heat or of cold is proved by the fact, that in very hot or very cold countries, the disease is comparatively unknown; that it is not a consequence of want of water is proved by the fact that where these animals die from want of water, as in some parts of Asia and Africa, the disease is also comparatively unknown, nay, if "water" has any influence in exciting the disease, I should incline to the belief that an excess would be more likely to have the effect than a deficiency; for the absence of perspiration throws the whole onus of fluid excretion upon the lungs and kidneys; it may be noticed that dogs, labouring under the œstrum veneris, are found to suffer from irritation of the urinary system more than in a state of health, the effect of which may be to relieve and moderate that instinct. Dr. Bardsley, in the "Encyclopædia of Practical Medicine," under the article Hydrophobia, remarks,—"With respect to predisposing causes, we have nothing but loose analogies; persons of the nervous temperament and of a feeble habit of body, and melancholic and irritable individuals, are occasionally liable

to obstructions of the great functions of the throat, breathing, and deglutition; and these impediments appear to be universally of a spasmodic kind. The globus hystericus, the dysphagia sicca, the hydrophobic spasm, spasmodic croup, and even spasmodic dysphagia, are all members of this family, and exhibit the common character of supervening suddenly; not unfrequently, indeed, from mental emotion also, or gastric irritation, particularly dyspepsia. But these are merely evanescent accidents, and have no right to be considered, as having the same origin with the terrible spasms of human hydrophobia. On the contrary, we have already seen, that the hydrophobia of man occurs in every temperament, age, and habit, and it is most illogical to infer that they have anything in common in their origin."—P. 500.

With respect to four of the above-named diseases, the globus hystericus, dysphagia sicca, the hydrophobic spasm, and spasmodic dysphagia (the locality of croup is altogether different), they are most common after the period of puberty; rarely seen, I think, in childhood, and can hardly be said to occur in every age, temperament, and habit. If the meaning be intended, that canine hydrophobia may be communicated to the human subject of any age, &c. &c., this no more proves its origin under similar circumstances than the inoculation of cow-pox in every age, temperament, and habit, proves that *its* origin is equally diversified; and which it cannot prove, inasmuch as I shall hereafter shew it is not the fact. On the contrary, the four named diseases are essentially identical in nature, causes, and morbid appearances; and although, for the most part, they are merely evanescent accidents, I submit this character does not militate against their identity with canine hydrophobia, either in nature or origin, for the same cause which, operating through the physical structure of the dog, produces hydrophobia, operating through the more perfect organization of woman, produces an effect the same in nature, and differing only in degree; that this *moderation of disease* does not take place in the human subject, when inoculated with canine hydrophobia, I freely admit, but this is according to a "law" discovered, I believe, by myself, and which I shall develop when I come to speak of the origin and nature of the other morbid poisons; so far, then, from its being illogical, to my humble comprehension, it is a fair specimen of sound philosophical reasoning, as drawn from the book of Nature, and propounded by Brown, "that identity of effects warrants the opinion of identity of cause."

EXTERMINATION:

We suppress the remarks of the author on this point: he proposes castration of the male domestic animals.

Finally, then, if the pathology of hydrophobia be discoverable after an obscurity of 2,000 years, shall we despair of its successful treatment? By no means. On the contrary, I will endeavour, in my next, to demonstrate by facts, that *hydrophobia is a curable disease.*

ON THE INFLUENCE OF

AGE AND SELECTION,

ON THE

MORTALITY

OF THE MEMBERS OF THE

EQUITABLE LIFE INSURANCE SOCIETY

DURING A PERIOD OF

SIXTY-SEVEN YEARS,

ENDING IN 1829.

By T. R. EDMONDS, *Esq., London.*

THE EQUITABLE SOCIETY was founded in 1762, and is the chief of existing institutions for the insurance of lives. The publication of the "Experience" of this Society, has long been an object of general desire to a large class of the community. This desire has been unexpectedly gratified, and the public are now in possession of a rich fund of new materials for the solution of some of the most interesting questions regarding human mortality. The value of the gift conferred upon the public by the Equitable Society may be estimated from the following summary of the facts which have been observed in full detail.

From the institution of the Society to the beginning of the year 1829, there had been insured 21,398 lives, of whom 5,144 had died whilst members of the Society, and 6,930 survived, and were members of the Society in the year 1829. The remainder of those admitted, amounting to 9,324 lives, had quitted the Society, by "discontinuing" the payment of their premiums. There had been insured 250,618 (a quarter of a million) years of life; that is, each person admitted, had, on an average, been insured 11¾ years. The number of deaths having been 5,144, the annual mortality was 2.05 per cent., or one out of 49 nearly. The number who have lived, and the number who have died, during every year of age, have been stated; and the number so living or dying at each age, have been distinguished according to ages when admitted,—a distinction never before introduced into any observation on mortality.

It has long been known that the mortality suffered by annuitants and assured lives, was lower than the general standard. Among well-informed persons this diminished mortality has always been attributed to the influence of "selection," and not to any

superiority in the lives of persons in the middle classes. In the case of annuitants, lives superior to the general average were perceived and selected; in the case of lives proposed for assurance, those worse than average lives were rejected; at least such was the prevailing opinion. Until the publication, however, of the present observation of the Equitable, there existed no positive evidence that "selection" diminished the mortality. In the Government Annuity Office there exist materials equal in value and extent to those now published by the Equitable Society; but the public have been able to obtain no information from their own handsomely paid servants; and they are indebted to the bounty of the Equitable Society for all the knowledge which they now possess respecting the influence of "selection." The materials supplied by the Equitable serve to show that the mortality, at any given age, depends greatly upon the time elapsed since admission, and increases as this time increases, with considerable uniformity. They also show, that excluding insurances which have endured less than five years, the mortality experienced in the Equitable has not materially differed from Dr. Price's estimate, as exhibited in his tables for Sweden.

The knowledge of the number who have lived, and of the number who have died, during every year of age, is all that is required for determining the law of mortality in any Society. In every assurance society the required information may be obtained, the following particulars being registered in the case of every life:—Date of birth, date of admission, date of retirement, and whether living or dead at time of retirement. The number of years passed in the Society, by each member, is thence known, as well as the period of life, or age, through which he has passed. For example, if a member be admitted at the age of 30, and if his retirement take place 10 years after, then this member will have been insured for every year of age between 30 and 40. The retirement of this member, or rather his withdrawal from observation, may happen in either of three ways:—First, he may have quitted the Society alive at the end of ten years, by "discontinuing," or omitting to pay his eleventh annual premium.* Secondly, he may have remained a member of the Society at the close of the period of observation; and when his eleventh annual premium would become due, (if the period of observation closes in the year 1829, such of the members then existing as were admitted in 1819, could have completed no more than 10 years in the Society). Thirdly, he may have died within one year after the payment of his tenth annual premium. The years of life insured are the same in all three cases, and correspond with the number of annual premiums which have been paid.

In all assurance societies, the payments (with very few exceptions) are made once every year during the existence of the life assured. The first premium is paid on the day of granting the policy, and the future premiums become due on the same day of the month in each succeeding year. But the assured are commonly allowed 30 days beyond the anniversary of the granting of the policy, during which the premiums may be paid without incurring fine or forfeiture. Such are the rules now of the Equitable; so that every policy may be considered as renewable yearly, and as having been in force some entire number of years, ending on the anniversary of the granting of the policy. The correctness of this assumption is affected in a very insignificant degree by the addition of 30 days to the time insured of each "discontinuing" member, whose payments were annual, or by the addition of six months to the time of the small proportion of discontinuing members, who availed themselves of the permission (long since withdrawn) of paying their premiums half yearly or quarterly.

The present observation of the Equitable is made to terminate in the year 1829; but the nature of the termination has not been sufficiently explained. The observation on each life ought to terminate in 1829, on the anniversary of the granting of the policy, so that fractional parts of years insured would then be excluded from the calculations. The time comprehended by the observation would then be described as "from the institution of the Society, in 1762, to the anniversary, in 1829, of the granting of each policy." It is, however, uncertain, whether such has been the intention of the actuary of the Equitable, who in one place says, "the duration of the lives of members has been reckoned according to the number of entire years which they have completed since the time of their admission;" and in another place says, "the mortality of the year 1829 has been included in the observation." These two statements are contradictory, if the mortality throughout the *whole* of the year 1829 has been included, for then fractional years of life must necessarily have been observed. The accompanying tables of results have been deduced on the assumption that the mortality of *half* only of the year 1829 has been included, and that entire years of life, ending on the anniversaries of the different policies, have alone been observed. If, however, the deaths of the whole year 1829 have been included, it will be necessary to increase proportionally the presumed quantity of life insured. The

* A person may "discontinue," by abandoning his policy, or by selling it to the Society, or by reason of the term, or contingency, of the insurance having expired.

members living in 1829 amounted to 6,930, each of whom may be assumed to have lived half a year after the anniversary of his policy, in 1829; in all 3,465 years of life. This number being added to 250,618, the number of entire years of life insured, would cause a reduction of the mortality herewith stated of about 1¼ per cent. at every age.

In every insurance office the age of the life insured is reckoned from the *next* birth-day; a person who is above 31, and less than 32 years of age, is assumed, on the policy, to be aged exactly 32 years, which is half a year greater than his probable age. In the case of a great number of lives insured during any year of age, the probable age of each becomes the true mean age of the whole; so that the stated ages are, in all cases, half a year greater than the true ages. This difference between the true and stated ages is not of much importance when the age is under 53, because the mortality does not then increase very fast with the age; but at superior ages, a difference of half a year is of considerable moment, as the mortality (in all tables) increases 4 per cent. for every increase of half a year in age after 53. In annuity offices the ages are all reckoned from the *last* birth-day, so that the stated ages are, in general, half a year *less* than the true ages, and, consequently, a *whole year* less than the stated ages of the same lives, if belonging to a life insurance society. Through inattention to this distinction, rates of mortality, differing from each other 8 per cent. (one year's increase), have been regarded as identical. The above remarks are of some importance on the present occasion, as they may serve to explain a discrepancy of 4 per cent. in the mortality, according as the true or the stated ages are adopted. In the accompanying tables of results, the true ages are indicated.

The materials now supplied by the Equitable, are of the following nature. The total number who have been admitted into the Society, are formed into distinct classes, according to the year of age at admission. The number, advancing to every successive year of age, is then separately stated for each class; and three kinds of decrement, occurring during any year of age, are specified. For example, 643 are stated to have been admitted at the age of 25; out of whom 421 are stated to have attained the age of 30, and 380 to have attained the age of 31. The decrement 41, between the ages 30 and 31, is attributed to three sources:—1st. 10 were existing members, aged 30, in 1829, having been insured in 1824. 2nd. 29 had quitted the Society at the age of 30, by "discontinuing," or omitting to pay their sixth annual premium; and, 3rdly. 2 had died between the ages of 30 and 31 years. Subtracting the sum of the living, and the discontinuing, from the number "attaining" the age of 30, there will remain 382 insured at the age of 30, for one year. Of these 2 died before attaining the age of 31 years. The quotient from dividing the deaths (2) by the years insured (382), represents the mortality, or the relation of the dying to the living, between the ages of 30 and 31 years, of all admitted at the age of 25. Similar information being supplied for every other year of age, and for every other class of admissions, we possess all that is requisite to form tables of mortality of the members admitted at every age.

The materials, as printed by the Equitable Society, are arranged in such a manner as to exhibit the number attaining any year of age, out of a certain number admitted at another age. In order to determine the effect of "selection" on the mortality, it was found necessary to make a new arrangement of the materials, so as to display the number of years elapsed since admission, instead of the year of age attained. In the printed form it is stated how many attained the age of 30, out of so many admitted at the age of 25. In the new form the same fact was expressed by saying, that out of so many admitted at the age of 25, so many completed 5 years as members of the Society. Having made the use intended of the materials thus arranged, according to age and time from admission, I formed an aggregate of all the observed facts, by omitting the distinction of age, and regarding only the year from admission. By means of the total experience of the Equitable, thus arranged, I was enabled to establish a new and rather remarkable fact; viz., that the mortality increases uniformly as the time from admission increases. When the mortality of all the members of 10 years' standing is known, the mortality of the members of 20, or any other number of years' standing, may be calculated. An increase of 32½ per cent. in the mortality, for every addition of five years to the time elapsed since admission, will represent, in all cases, the observed facts. Although the principal object of the present paper is to exhibit the combined influence of age and time from admission, on the mortality, a view of the facts arranged according to time from admission alone, may be introduced with propriety. Such an arrangement, besides being interesting from its novelty, will, probably, possess the advantage of giving a clearer view than any yet presented, of the progress of the Equitable, and of the method of observing the facts accumulating.

(1.)—TABLE showing how many Members of the Equitable, from the year 1762 to the year 1829, had belonged to the Society any number of years; also, showing the numbers withdrawn from observation, on completing any one of these years; and the numbers dying in the ensuing year.

Year from Admission.	Attaining the End of Year.	Withdrawn.		Remaining Insured for whole of ensuing Year.	Dying during ensuing Year.
		Living in 1829.	Discontinuing before 1829.		
0	21388	.....	32	21356	105
1	21251	172	1043	20036	215
2	19791	183	1666	17942	239
3	17703	177	1104	16422	216
4	16206	193	913	15100	200
5	14900	176	665	14059	203
6	13856	186	545	13125	215
7	12910	194	690	12026	191
8	11835	235	647	10953	179
9	10774	244	301	10229	179
10	10050	225	231	9594	187
11	9407	229	193	8985	181
12	8804	254	188	8362	178
13	8184	318	142	7724	186
14	7538	306	147	7085	168
15	6917	299	142	6476	170
16	6306	312	99	5895	157
17	5738	277	65	5396	143
18	5253	285	67	4901	148
19	4753	346	68	4339	133
20	4206	218	53	3905	140
21	3765	225	48	3492	122
22	3370	197	38	3135	127
23	3008	180	29	2799	115
24	2684	167	33	2184	101
25	2383	147	19	2217	95
26	2122	153	25	1944	90
27	1854	149	16	1689	97
28	1592	123	22	1447	78
29	1369	106	16	1247	77
30	1170	91	9	1070	73
31	997	71	12	914	66
32	848	50	4	794	46
33	748	62	7	679	45
34	634	57	3	574	44
35	530	49	7	474	38
36	436	32	7	397	44
37	353	41	.....	312	28
38	284	39	4	241	26
39	215	29	3	183	9
40	174	22	3	149	16
41	133	25	.....	108	15
42	93	18	1	74	8
43	66	13	.....	53	6
44	47	8	3	36	5
0—44	266615	6913	9310	250122	5134
0—67	266872	6930	9324	250618	5144

Note.—In the last line of the Table (1) have been included 10 lives admitted above the age of 66 years, together with the observations on members of more than 45 years standing.

Example (Table 1.)—There were admitted, 21,388 between the ages of 6 and 66 years. Of these, 10,050 belonged to the Society 10 years, and 456 were withdrawn from observation at the beginning of the 11th year (225 living members in 1829, who had been insured in 1819, and 231, who discontinued, and never paid their eleventh annual premium); and there remained insured for the ensuing year, 9,594 persons, of whom 187 died before they had completed their 11th year from admission.

(2.)—TABLE derived from the preceding Table (by adding together the observations of successive periods of five years) showing the annual rate of Mortality, of the Members in the aggregate, at any time from admission, according to fact, and according to the hypothesis of a uniform rate of increase,—32½ per cent. every five years.

Years from Admission (inclusive).	Attaining end of Years.	Withdrawn.		Remaining, or years insured	Died.	Annual Rate of Deaths per cent.	Rate by hypothesis
		Living in 1829.	Discontinuing.				
0	21388	.....	32	21356	105	.19	—
1..5	89851	901	5391	83559	1103	1.32	1.32
6..10	59125	1084	2411	55927	951	1.70	1.75
11..15	40850	1106	812	38632	883	2.29	2.32
16..20	26256	1468	352	24436	721	2.95	3.07
21..25	15210	916	167	14127	560	3.96	4.07
26..30	8107	622	88	7397	415	5.61	5.39
31..35	3757	289	33	3435	239	6.96	7.15
36..40	1462	163	17	1282	123	9.59	9.47
41..44	339	64	4	271	34	12.55	12.55
0..44	266645	6913	9310	250122	5131	2.05	—

Example (Table 2).—There were 15,210 members who had attained the end of years 21, 22, 23, 24 or 25 from admission; of whom 14,127 renewed their insurances for the ensuing years. There died of the latter, 560; being at the rate of 3.96 per cent. per ann. According to the hypothesis, the annual rate would be 4.07 per cent. of those who had been insured more than 21 and less than 26 years.

In proceeding to determine the influence of "selection" on the mortality at each age, tables exactly resembling the table (1) given above, were used. The latter is merely the aggregate of the former. In the first instance, it was found necessary to construct 60 of such tables; one for the admissions of each year of age, from 6 to 66. In forming these constituent tables, nothing more was necessary than to place in vertical succession the numbers which were printed in horizontal succession. There were 643 admitted at the age of 25; and it is stated, in the printed form, that 638 of these attained the age of 26. In the new form the number 638, was placed in the same column as the number 643, and in the line indicating one year from admission. In the same manner the numbers standing under any other age, were transferred to the columns of admissions, and placed opposite a number representing the time elapsed from admission. The next step was, to combine these tables, and to form one table out of every five. By adding together the numbers similarly placed, and in the same horizontal lines, a table was formed for all admitted during the five years between the ages of 21 and 26 years, of the same form as the general table above presented. In the same manner tables were formed for those admitted, between the ages 26 and 31 years; between the ages 31 and 36; and at other quinquennial intervals.

The materials having been thus collected and arranged, the law of mortality prevailing in each quinquennial class was easily deduced, in terms of times from admission. The results did not directly express the mortality in successive years of age, but in successive years from admission. The latter mode of expression was converted into the former, by assuming all the members of each quinquennial class to be of the same age—the mean age of the class under observation. For example, all those admitted between the ages of 21 and 26 complete years, were assumed to have been exactly 23½ years old at admission; and the mortality observed during the first, second, third, &c., years from admission was assumed to represent the mortality occurring between 23½ and 24½ years of age; between 24½ and 25½; between 25½ and 26½, &c., respectively. Similarly, those admitted between the ages of 26 and 31, between 31 and 36, &c., were assumed to be of the mean ages 28½, 33½, &c. The year of age observed in any case was then ascertained by adding the year from admission to some one of the mean ages 23½, 28½, 33½, &c.

(3.)—TABLE showing, according to different laws of mortality dependent on the time from admission, the number dying in five years out of 100 living at the beginning of each of 12 consecutive quinquennial intervals of age.

Quinquennial interval of Age.	Duration of Membership.—Class limited by undermentioned Years.											Village table two and half years older
	0—5	5—10	10—15	15—20	20—25	25—30	30—35	1—11	11—21	21—67	5—67	
23½..28½	4.36							4.93			4.99	4.2
28½..33½	3.43	4.75						3.80			4.20	4.8
33½..38½	4.37	5.44	5.63					5.55			5.86	5.6
38½..43½	5.34	5.41	6.26	7.54				5.76	6.85		6.00	6.5
43½..48½	5.03	6.20	7.07	7.33	8.64			5.87	7.80		6.90	7.4
48½..53½	8.92	8.22	9.12	9.84	11.51	13.67		9.08	9.58	11.39	9.51	8.6
53½..58½	10.24	11.31	10.65	11.09	12.45	16.97	21.67	10.57	10.84	14.10	11.63	11.6
58½..63½	10.91	15.66	15.15	15.07	15.97	18 92	23.97	14.95	15.83	17.77	16.48	16.6
63½..68½	16.83	20.43	23.91	23.64	23.81	24.26	24.27	20.99	23.53	25.27	23.79	23.4
68½..73½	—	32.27	29.67	28.67	33.34	32.92	35.34		29.96	33.71	31.94	32.3
73½..78½			45.20	45.23	38.85	35.95	37.07		43.80	42.42	42.65	43.6
78½..83½				43.54	60.36	67.04	50.15			54.42	54.42	56.9

(4.)—Number of Deaths in which each of the above results is founded.

												Total Deaths in Establ
23½..28½	94							100			23	10
28½..33½	107	64						158			73	10
33½..38½	141	119	52					324			189	3:
38½..43½	152	123	96	44				285	126		271	4:
43½..48½	108	128	114	77	30			244	216		357	4:
48½..53½	141	128	136	106	76	26		284	233	82	477	6
53½..58½	105	125	118	111	83	62	20	226	220	142	505	5
58½..63½	64	112	118	112	100	75	46	203	238	201	577	6
63½—68½	51	83	116	122	106	88	52	156	228	268	605	6
68½..73½	—	67	78	82	99	81	63	—	216	263	504	5
73½..78½		—	52	60	58	50	42		124	198	322	3
78½..83½			—	22	32	41	32			157	157	1
Totals..	963	949	880	736	584	423	255	1980	1631	1311	4060	50

Example (Table 3.)—Out of 180 living at the age of 43½ years, there died 6.20 before attaining the age of 48½, according to the law of mortality of those who had been members more than 5, and not more than 10 years.

In order to obtain results for comparison, founded upon a sufficient number of facts, the mortality of each class during periods of five years was calculated. The probability of dying within the first five years after admission, within the second five years, and so on, was calculated for each quinquennial class. It may easily be perceived that the same quinquennial intervals of age have thus been observed in the different classes, and that these intervals are marked by the limits 23½, 28½, 33½, 38½, &c., years of age. The probabilities of dying during any of the above-mentioned quinquennial intervals of age are represented for each class in Table 3. The results show, with very few exceptions, that the probability of dying in any specified interval of age, increases as the time from admission increases. For, example, out of 100 alive at the age of 38½ years, there died before attaining the age of 43½ years,—7½ (7.54), according to the law of mortality of those admitted at the mean age of 23½ years; and only 5½, according to the law of mortality of those admitted at the mean age of 38½; being a difference in the mortality of 40 per cent. at the same interval of age. Similar differences occur at other ages, but the increase of the mortality, with the time from admission, is less regular at advanced ages; which appearance may arise from the observations on old lives not having been

yet sufficiently numerous. In the Government Annuity Office there exist most abundant materials for determining the effect of selection at advanced ages, in which respect the Equitable Experience (until 1829) is comparatively defective.

The mode of proceeding, now explained, whereby the effect of "selection" has been estimated, may not be entirely satisfactory to every reader, as he may hesitate to admit the truth of a principle with which he is not familiar. Although I believe the above process to be unexceptionable, and most correct, I have thought it better to obtain a confirmation of the results by a different process, resting upon none but the most commonly acknowledged truths. In this second process, the mortality at any year of age was obtained by dividing the printed column containing the living and dying at that age, into four parts, and adding together the numbers in each division placed under one another. In the first division was contained the living and dying during the first year only after admission. In the second division was comprised all who had been members more than one, but not more than eleven years. The third division comprehended those from 11 to 21 years: and the fourth division comprehended all members of more than 21 years' standing. The observations at each year of age were thus divided into four parts; and the mortality for each part was calculated in the same way as the mortality of the whole would have been, by dividing respectively the sums of the deaths by the sums of the living. On inspection of Table 3, it will be perceived that the results thus deduced from the true ages, resemble and agree well with the results deduced by assuming all the members of a quinquennial class to be of one and the same mean age.

Having determined, by two methods of observation, that the mortality of new members was considerably less than that of ancient members of the same age, it appeared desirable to obtain some general measure of the mortality experienced in the Equitable, applicable to members of neither very recent nor very ancient standing. The measure or standard sought, of the "Experience of the Equitable," I conceived to be contained in the law of mortality suffered by all the members of more than five years' standing. The exclusion of the lower average of mortality, suffered during the first five years after admission, appeared to be a just compensation for the higher average of mortality, which may be expected to occur hereafter among members of longer standing than those yet observed.

The mortality at successive quinquennial intervals of age, suffered by the several classes which have been described, is exhibited in Table 3. For the sake of comparison there has been added a column representing, at ages $2\frac{1}{2}$ years greater, the mortality, according to one of my theoretical tables, which I have designated "*Village*" mortality. This table expresses the lowest rate of mortality ever said to be recorded, and agrees very closely with Mr. Milne's table for Carlisle. The agreement between the mortality of the members of the Equitable of more than five years' standing, with this modification of the Village Table, is very striking throughout the entire period of age over which the observation extends. The observed fact, at the age of $33\frac{1}{2}$ years, was, that, out of one hundred living at this age, 5.86 died within five years after. The Village Table indicates 5.63 as the corresponding number of deaths in five years from age 36 (being $2\frac{1}{2}$ years more). Similarly, during the five years after $63\frac{1}{2}$ in the Equitable, and after 66 in the Village Table, the deaths out of 100 were 23.79 and 23.42 respectively. The Village Table has been formed by assuming the mortality to increase uniformly with the age—3 per cent. every year under 55, and 8 per cent. every year after the age of 55 years. The near agreement, throughout a series of 60 years, between this table (at ages $2\frac{1}{2}$ years greater) and the Equitable Experience, is a sufficient proof of the latter being in conformity withe the general principle upon which the Village and others of my theoretical Tables have been founded.

(5.)—Comparison of the Experience of the "Equitable" with the table of "Village" mortality, at ages $2\frac{1}{2}$ years greater. The proportion who would survive the passage through each and all of 12 successive quinquennial intervals of age being stated according to both laws.

Equitable Experience.		Village Table.	
Age.	Survivors.	Survivors.	Age.
$23\frac{1}{2}$	1474	1472	26
$28\frac{1}{2}$	1400	1410	31
$33\frac{1}{2}$	1341	1311	36
$38\frac{1}{2}$	1263	1266	41
$43\frac{1}{2}$	1187	1183	46
$48\frac{1}{2}$	1105	1095	51
$53\frac{1}{2}$	1000	1000	56
$58\frac{1}{2}$	884	883	61
$63\frac{1}{2}$	738	737	66
$68\frac{1}{2}$	562	564	71
$73\frac{1}{2}$	383	381	76
$78\frac{1}{2}$	220	215	81
$83\frac{1}{2}$	100	92	86

Ex. (Table 5).—Out of 1474 attaining the age of $23\frac{1}{2}$ years, 1000 attain the age of $53\frac{1}{2}$, and 220 the age of $78\frac{1}{2}$, according to the law of mortality experienced in the Equitable among members of more than five years standing.

The Experience of the Equitable agrees very closely, at every age above 53, with my table of "Mean" mortality, since the latter (at this period) coincides with the Village Table at ages 2½ years greater. The mortality in the "Mean" Table at any age is exactly 20 per cent. greater than that of the "Village" Table; and as the mortality above the age of 55, in both tables, increases 8 per cent. in one year, or 20 per cent. (nearly) in 2½ years, it is manifest that the mortality in the "Mean," at a given age, will be the same as in the "Village" Table at 2½ years greater than that age. At ages under 53 years, the agreement between the Experience of the Equitable and "Mean" Table is not so great, although the Experience continues to agree with the mortality of the "Village" Table at ages 2½ years greater. In comparing the Equitable Experience with printed tables, the introduction of fractional years of age cannot be avoided, because the yearly intervals of age observed are not identical. In all published tables the intervals terminate at 21, 22, 23, &c. complete years from birth; in the Equitable Experience the terminations are at 21½, 22½, 23½, &c. years from birth.

The table of "Mean" mortality agrees very nearly, at every age, with the Table of Mortality for Sweden, constructed by Dr. Price, and recommended by him as the best standard of general mortality. Dr. Price once recommended the Northampton Table as such a standard, but he withdrew his recommendation as soon as he became acquainted with the Sweden observations. At the ages above 60 the Northampton and the Sweden Tables agree very well with each other; but at inferior ages the Northampton considerably exceeds the Sweden mortality. About twenty years ago a new standard of mortality was recommended by Mr. Milne, in the "*Carlisle*" Table. Notwithstanding the great weight of the recommendation, the opinion in favour of the Carlisle Table never made any progress in well-informed quarters. It has since been discovered that the error of Mr. Milne's argument, in favour of the applicability of the Carlisle Table, as a general standard, consisted in the assumption that the mortality in England had been diminished at every age, in the same proportion as the aggregate mortality had been diminished. It has been proved by recent observations that the diminution in the mortality has been confined to children, the mortality of whom is as much overstated in the Carlisle Table, as the mortality of adults is understated.*

It is a general law, applicable to all observations, that the mortality from 20 to 50 years of age increases with the age at the rate of 3 per cent. every year, or at the rate of 33 per cent. every 10 years. An apparent exception to this law has existed in annuity and in assurance societies, wherein the rate of increase of the mortality of the aggregate of members has seldom if ever exceeded 20 per cent. for every additional ten years in age. By means of the fully detailed particulars presented to the public by the Equitable Society, we are enabled to explain the apparent exception, and to show that it is the effect of the disturbing influence of "selection." When the facts have been classified according to time from admission, the deviation from the general law of increase is found to exist only in the few years immediately following admission (as may be seen in Table 3). The value of selection would hence seem to be greater at older than at younger ages. On closer inspection, however, it will appear more probable than the value of selection is nearly the same at all ages, or that the same proportion of bad lives are excluded at all ages. The effect of selection appears to endure much longer among young than among old lives: in the former case, a small diminution of the average mortality extends over a long period; in the latter case, a greater diminution of the average mortality extends over a short period after admission. The effect of selection is most remarkable during the first year after admission. The mortality suffered in this year is not half so great as the mortality suffered in the second year from admission, as may be seen on inspection of Table 1.

The apparent exception which has now been explained, is, that the aggregate mortality in annuity and insurance societies increases more slowly than in the general population. The detailed experience of the Equitable serves not only to remove this exception, but, at the same time, serves to establish the fact (apparently contradictory) that the mortality increases much more rapidly than 33 per cent. every ten years, in each quinquennial class of admission. This fact may be observed on inspection of Table 3, wherein the rates on the same diagonal line represent the law of mortality of a single and distinct class of admissions. The mortality of the class admitted at the mean age, 23½ years, increased, in 20 years, from 4.36 to 8.64, which is at the rate of 41 per cent. in 10 years; the mortality of those admitted at the mean age, 33½, increased, in 10 years, from 4.37 to 7.07, or 62 per cent. These facts may be easily explained; all that is required is, the admitting that the value of selection diminishes with the time elapsed since admission or selection. It can hardly be doubted that the average mortality will be more diminished in the first five years after admission than in the second five years; or that it is more easy to perceive and reject lives which will fail in less than 5 years, than such as will live more than 5, and less than 10 years. If, in obedience to the

* See LANCET, Nos. 640, 641, and 643.

ordinary law, independently of selection, the mortality in 10 years increases 33 per per cent.; and if the effect of selection is to reduce the mortality 10 per cent. more at the beginning than at the end of the 10 years, we shall have, as the result (corresponding with the fact), an increase of 43 per cent. every 10 years in mortality effected by "selection."

There exist several tables professedly representing the "Experience of the Equitable," all of which are founded upon a short and inaccurate verbal statement (containing no more than half a dozen numbers) made by the late actuary of the Society in the year 1800. According to these tables, resting upon such a loose foundation, the Equitable Experience agrees nearly with the "Carlisle" Table. But no attempt has been made by the respective authors to confirm their tables, by comparing them with the real and properly-called "Experience of the Equitable," since published. It can hardly be doubted that such an attempt would have been made if the detailed facts had corresponded with their expectations. It is now more than three years since the Experience of the Equitable has been published, yet the present is the first attempt which has been made to convey to the public any intimation of the value and novel character of the results thence deducible.

The magnitude of the surplus accumulated in some of the older insurance societies, has led to the belief that the estimated mortality has been much higher than the mortality experienced. The facts now presented in full detail, by the Equitable Society, prove this belief to be ill-founded, at least if the mortality experienced during the first five or ten years after admission be excepted. The available surplus in the Equitable would not have been of very great amount if none of the members had abandoned their policies, and if the funds of the Society had been improved at no higher rate of increase than that calculated in the tables. It is the practice with several new insurance societies to proclaim that their surplus fund is very great, and will admit of a very large bonus, or of a very large dividend per share; but very few of these societies present the public with any evidence of the existence of the alleged surplus. It is not by the actuaries of these societies, nor on their recommendation, that the declaration of profit or bonus is commonly made. It may well be doubted whether the surplus allotted has not, in many cases, exceeded the true surplus. The calculations (if there have been any) may have been made on the assumption, that the mortality of a society arrived at maturity will not exceed that of a society in its infancy.

The public appear to have fallen into the serious error of expecting from life offices of the present day the advantages which have been yielded by the "Equitable," under peculiarly favourable circumstances not likely again to occur. The consequence of this error is, that the public give undue encouragement to societies who *promise* these advantages, but offer very slender security for the performance of their promises. The sources whence the Equitable derived the chief part of its surplus have been nearly dried up. A great portion of the funds of the Equitable were invested in government securities, when selling at 60, which are now selling at 90, thus yielding a gain to the Equitable Society of 50 per cent. The excess in the interest of money above the calculated interest of 3 per cent. was another large source of profit to the Equitable, which is now nearly cut off. The profit from abandoned polices of insurance is now of inconsiderable amount in offices enjoying good credit. Even the profit from "selection," which has been so considerable in the Equitable, must be considered as henceforth subject to great diminution, and, in the case of some offices, to have no existence. At the present day such is the competition among various life offices, that a large proportion of lives proposed for insurance are now accepted, who would formerly have been rejected.

46, Regent-square, London,
Oct. 21st, 1837.

POISONING, WITH CREAM OF TARTAR, OF A SERVANT OF MORISON THE QUACK.

To the Editor of THE LANCET.

SIR:—If the enclosed account of a case of poisoning from taking a large quantity of cream of tartar is worthy to be recorded, I would beg the favour of its insertion in an early number of THE LANCET. I am, Sir, your obedient servant,

W. T. TYSON, M.R.C.S.
57, Ossulston-street, Somer's-town,
October 22, 1837.

John Hudson, æt. 37, residing at No. 24, Southampton-street, Euston-square, employed by the notorious and self-styled Dr. Morison, at his pill establishment in the New-road, King's Cross.

On Tuesday evening, Oct. 10th, he returned home extremely weak, and scarcely able to walk. He stated that he had been severely purged,—had at least twenty-five motions, attended with constant vomiting. On the day previous (Monday) he was drunk. The nurse told me that one of Morison's men said he was sure Hudson had taken nearly a quarter of a pound of cream of tartar at one time; and that, during the day, he was continually putting small lumps into his mouth, to cool his stomach. The nurse also noticed a quan-

tity of white substance at the bottom of the chamber utensil. She then asked him if he had been taking any salt. It was, unfortunately, thrown away.

Wednesday, Oct. 11th, at 12 o'clock, he was seen by a medical gentleman, who found that during the night he had been repeatedly purged, and suffered greatly from constant vomiting. He complained of pain in the umbilical region, and of great thirst; tongue brown and dry; pulse feeble; pain in the loins; the thighs and legs appeared paralysed; the fluid vomited was of a blackish-green colour, and the motions of the colour of coffee-grounds. He stated that he had taken four or five table-spoonsful of cream of tartar, which is a principal ingredient in Morison's cooling powders. An opiate was given to him, which afforded slight relief; but the symptoms returned, and he died on Thursday, at noon; and, on Saturday, October 14th, I was requested to assist in making a

Post-mortem Examination of the Body.

He was a strongly-built, well-formed man, stout and muscular; no spot or bruises on the body; the fat covering the abdominal muscles about half an inch thick.

Stomach.—This was distended with gas, and contained about three ounces of a thick brown fluid, coloured apparently with bile; near the pylorus there were several red patches; the cardiac end of the stomach was very much inflamed; the mucous membrane being of a deep-red colour, with three or four spots of a blackish-red, as if from rupture of some of the minute blood vessels; the mucous membrane of the duodenum was also of a red colour in many places, but not in so great a degree as that of the cardiac end of the stomach; it contained apparently the same kind of fluid as the stomach; a portion of the small intestines, as also the colon, had the mucous membrane reddened; the mucous membrane of the rectum was injected in small streaky red patches; where there was no redness, the membrane was of a white colour; the intestines contained a thick brownish kind of mucus; no fæcal matter was observed throughout their whole extent; a great deal of fat was attached to the large intestines, and the omentum contained a large quantity.

Chest.—The lungs might be termed healthy, though there were adhesions at the posterior part of the lobes of the left side, and at the anterior part of the lobes of the right, evidently of an old formation. The *Heart.*—A great quantity of fat about the pericardium; the heart was unnaturally large and flabby; the lining membrane of the left auricle was of a deep-red colour, as also the lining membrane of the aorta and semilunar valves. *It weighed* 13 *oz.*

Liver.—Large, and very firm; on cutting it an oily appearance was left on the knife, and the oil could be scraped from the cut surface. *It weighed* 4*lb.* 11 *oz.*

Spleen.—Healthy.

Kidneys.—Large, and imbedded in fat.

MESMERISM IN LONDON.

REPLY TO THE LETTER OF AN EYE-WITNESS.

To the Editor of THE LANCET.

SIR:—I am induced to address you on the subject of Animal Magnetism, or, rather, as Dr. Elliotson has called it, "Mesmerism," in consequence of the observations of an "EYE WITNESS," contained in THE LANCET of the 14th inst. I have no wish to appear as the champion of mesmerism, nor can I go the length of many of its supporters in believing it; but at the same time, I cannot but think that enough has been proved to justify, nay, I will say, demand, an impartial inquiry into its truth; and it is but fair that the arguments for, as well as against, should be made known so far as they have been indisputably proved by experiments carefully conducted and frequently repeated. I am the more induced to undertake this in consequence of some experiments which, in my duties at the hospital, I have had opportunities of performing several times; the results of these have been such as, in my mind, and, I think, in the mind of any impartial critic who is open to conviction, and who has not an insurmountable objection, and dread of everything that bears the semblance of novelty, will completely establish the fact, that one individual has the power of operating upon and producing a certain effect, or change in the system of another. I have no intention of attempting to explain how this is effected, but that it is effected I think there can be no doubt.

I will begin with that part of your correspondent's letter in which he says, "it will be found in Dr. Elliotson's lecture that no effects, except a slight one, in a solitary instance, have been wrought on male patients subjected to the ordeal." Now, it appears to me, either that your correspondent read this lecture by proxy, or that he read it with his mind prejudiced and determined not to see anything that would in any way weaken his side of the question. He will find, if he refers to the lecture, and will remember if he really has been what he states, viz., an eye-witness, that effects other than slight were produced, and in more than a solitary instance on male patients; and Dr. Elliotson distinctly states that he had, in his own person, experienced its effects; but I will quote the passage from Dr. E.'s lecture: "Generally speaking it took no effect on male subjects, or if it did, it was very slight, consisting of slight

twitching of the muscles, a feeling of fullness and gasping, or catching of the breath; in many cases not even so much as this. These effects, however, were not imaginary, he (Dr. E.) had felt them, and he had expected rather to go to sleep if there had been any effect. Some, however, went to sleep who had made up their minds that no effect could be produced, and had determined to resist it, if possible." Now, one of the male patients who was the subject of epilepsy was very frequently subjected to the process of mesmerism, and on almost every occasion profound mesmetic sleep was produced, so that he snored, and if he chanced to wake he was sent to sleep again. On waking he generally complained of a sharp pain in some part, usually in the arm.

As regards the female patients, "Rebecca and the *prima donna* of the magnetic stage," we will admit, for the sake of argument, that they proved nothing in favour of mesmerism, at least they proved nothing against it; but I may observe that the first time Rebecca was subjected to these manipulations she was totally ignorant of what was to be done; and we must, therefore, at any rate, consider it as a singular coincidence that she went to sleep; the same was the case with the "prima donna" when first submitted to the process before ever seeing the hospital or M. Dupotet. But my belief is grounded partly on the effects produced on healthy individuals, and also on the little girl whom your correspondent mentions as the subject of ecstatic delirium, and these effects I have myself produced. A young gentleman, 20 years of age, of robust habit, and in perfect health, was asked to submit to an experiment; he sat down for this purpose, perfectly convinced of the absurdity of all that had been said about mesmerism, saying that he was sure that no effect could be produced upon him, and that he never felt less inclined to sleep. I may observe, in passing, that this was about 11 o'clock, A.M., when persons are not, I think, usually sleepily inclined. Having made a few longitudinal movements with my hand before his face, in ten minutes he closed his eyes, and fell into a profound mesmetic sleep. I say *mesmetic*, because persons in this state are not roused from it by those circumstances that wake persons from ordinary natural sleep; while in this state the hair was pulled out of his temples, his hands, and other parts were pricked with a steel pen, and he was pinched so severely that the marks remained when he awoke, and then he acknowledged that he was not sensible of those things having been done, and that he had fallen into a state that he had not the power of preventing. A similar experiment was tried on the same individual immediately afterwards, with precisely similar results. In the last experiment he resolved to keep his eyes open as long as he could, but, in spite of his utmost efforts, he was compelled to close them.

In the case of ecstatic delirium the effects have been, if possible, still more marked and convincing. This state of delirium, I may observe, is always removed by mesmerism. It was thought that this state would cease of itself, independently of these manipulations, and accordingly the patient was allowed, during twelve successive days, to continue in this condition without being subjected to this influence; at the end of this time she was mesmerised, and recovered, in a few minutes, her natural senses. It appears to be necessary, in the case of this girl, that mesmetic sleep should be produced before she acquired her natural state of senses; at least, this always takes place before her recovery.

On Saturday last, 14th instant, the same patient being in her usual ecstatic state, the process was repeated, however, in a different manner; the patient, when visited, was sitting on a bench, employed with needlework, and was allowed to continue in the same situation, going on, at the same time, with her work. I extended my hand towards her face, and then returned, without any movement of it being made in any direction. In about twelve minutes the patient (having still her needle and work in her hands) closed her eyes, and in about another minute appeared to wake out of a profound sleep, perfectly sensible. In the course of the day she relapsed; and, in the afternoon, was again subjected to the same process, but this time her apron folded, eight times, was tied before her eyes; she asked me if I was going to play at hoop with her; this I consented to do on condition of her sitting still for ten minutes without speaking. I then pretended to leave the room for the purpose of hiding, and the patient, on asking if I were gone, was answered, by a bystander, in the affirmative. She observed that I was gone a long time, and feared she would not be able to find me; however, I was standing motionless before her all the time, with my hand extended, and directed towards her face, without making any movement, and, in five minutes, the patient appeared, as usual, to wake out of a profound sleep, perfectly sensible, and inquired who had placed the bandage on her eyes.

On the 16th, on visiting her, she was in the same delirious state, and in a few minutes closed her eyes, and appeared as if asleep; she continued so for a few minutes, when I again extended my hand, as before, without her knowing that I was present, and, in a few minutes, she awoke, as before, from profound sleep, in her right senses.

This morning (17th) she was again delirious. I now, without her knowledge, placed myself behind her, while her attention was directed another way, and she had no idea

of my presence, as was evinced by several observations she made; and one in particular, when she thought she saw a gentleman with my stethoscope, she said he had no business with it, and declared she would tell me when I came in; however, the same effect was produced, though it required a longer time, and she again awoke, as usual, from an apparently profound sleep, in her senses.

I had almost forgotten to mention an experiment which Dr. Elliotson performed (for the first time, I believe,) on this patient. Dr. E. saw her on the 15th, and found her delirious; the day before, he had ordered a blister to be applied to her head; this was applied in the evening while she was delirious. Dr. E., on the 15th mesmerised her, and in a few minutes she awoke, as usual, from profound sleep, in her senses, was surprised at seeing Dr. E. thus employed, and, on his asking her if the blister had given her any pain, said, she was not aware that one had been applied, though only a few minutes before, while in her delirium, she had been talking to him about it.

I hope I have said enough to convince impartial persons that all is not fiction that has been said of mesmerism. As to the constrained position against the will of the patient, that your anonymous correspondent alludes to, it must be obvious, I think, even to himself, that it could have had no influence in the experiments I have related. To what, then, are we to ascribe these very remarkable effects which, I may say, I have produced in this patient at all times, under all circumstances, and in various positions? I maintain, and I think I am perfectly justified in so doing, that this subject imperatively demands the impartial consideration of an enlightened profession; this is the only object I have had in framing these hasty remarks; and I will now conclude with an apology for trespassing at such length, and to assure you that what I have advanced I am ready to maintain and prove. I will subscribe myself your obedient servant,

W. Wood, Clinical Clerk.
University College Hospital.
Oct. 17, 1837.

REPLY OF DR. DICKSON TO DR. JAMES JOHNSON.

To the Editor of The Lancet.

Sir:—When Dr. James Johnson so far forgot the feelings of a gentleman and a physician as to accuse me, by insinuation, of "depleting my patients' purses," he was guilty of a *personality* which, being at once illiberal and without foundation, I naturally repelled with the scorn and contempt its author must now see he so justly merited at my hands. Having, on every occasion, refused to accept the fees of medical men and servants, even when tendered to me,—the one as being a breach of professional etiquette, the other as repugnant to my own inclinations, I could not forbear contrasting my conduct with Dr. James Johnson's actual practice in both respects. In his reply to my letter, Dr. Johnson admits that he has taken fees from both classes, but he attempts to avert the scorn of the profession by stating, that so far as he has done so in the case of medical men, they failed to make him acquainted with their professional character. May I ask him a question, did he, on ascertaining this, return their fees? Dr. Johnson says he never demanded a fee from any person, medical or otherwise. Upon the word, demand, he chooses to *quibble*, as if there were no other modes of extracting money than by a mere form of speech. Dr. Johnson will understand this:—During the summer, 1835, did he, or did he not, attend Surgeon Richard Gibbon, of the East India Company's service, a gentleman whose profession could not, by any possibility, be unknown to him, the more especially as the dropsy of which he was subject was contracted in India during his professional labours, a circumstance necessarily connected with the history of his case;—and did he, or did he not, stating that his fee was a guinea every second visit, take and accept *three* fees from that gentleman?

So much for Dr. James Johnson's shuffling attempt to rebut this, the only point of my letter which he thinks it politic to notice; he says nothing on the subject of my allusion to Mr. Jerdan's exposure of his note, begging for a puff of one of his productions in the "Literary Gazette;" nor has he denied that he has misrepresented myself and my views—views for which I again repeat, I have not the slightest doubt, a proper bribe would have secured a favourable reception in his contemptible periodical. He finds it more to his purpose to conclude his letter with a repetition of the low language and abuse contained in the scurrilous article of which any body but himself would have been forward to disown the authorship.

Dr. Johnson's experience ought to have taught him, by this time, that such language, so far from preventing the sale of a work, almost invariably contributes to its success by exciting public curiosity. Let me, therefore, express my obligation to him for the serviceable outpourings of his spleen upon this occasion.

In condescending to misstate and misrepresent the contents of my volume, he has taught its author how properly he, at least, appreciates labours which, with all his practice as a veteran dissector, he could in no other fashion assail. I have the honour to be, Sir, your obedient servant,

Cheltenham, S. Dickson.
October 3, 1837.

PREMATURE LABOUR ARTIFICIALLY PRODUCED.

We have received a communication from Mr. E. A. Cory, containing the following case of the artificial production of premature labour:—

Mrs. H., of short stature, and aged about 30, had twice undergone the operation of embryotomy. Mr. Cory attended her, for the first time, about three years since, when the same operation was again deemed necessary, and performed. The pelvic deformity was of the reniform character, the space between the sacro-vertebral angle and symphysis pubis being about two inches and three-fourths. It was consequently determined, should the recurrence of pregnancy render it necessary, that the premature induction of parturition at the seventh month of utero-gestation should be had recourse to. She had again become pregnant, and it was calculated that she had arrived at the 7th month of her pregnancy about Thursday, the 14th of September last. The ergot of rye was now given, and at six P.M., soon after the administration of the second dose, the uterine energy became slightly excited, and it was interesting as well as satisfactory to observe its gradual increase soon after the repetition of each dose of the medicine. On the next day (Friday), at one P.M., the parturient pains were tolerably active, but at considerable intervals. A vaginal examination was instituted, and the membranes were felt pressing against the undilated os uteri. Saturday, at eleven A.M.—The pains had gradually diminished in force and frequency, and she had experienced no pain from yesterday, at four o'clock P.M., to the present time, and was, to use her own expression, "quite well again." The institution of another vaginal examination demonstrated that the os uteri had not in the least degree increased in dilatation, and that the pressure of the membranes, which had been previously experienced, had now entirely subsided. Instead of repeating the secale cornutum, lest it might destroy the infant, it was thought most prudent to ruptnre the membranes, the distension of which had now completely subsided. She was again visited on Sunday, at a little after one P.M. She remained in a similar condition, and there had been no accession of the pains of parturition. On Monday she had not yet experienced any pain, and the bowels being in a constipated state, Mr. C. prescribed an aloetic purgative, with a carminative addition, which had the effect of thoroughly evacuating the bowels, and exciting the uterus to action; so that early on Tuesday morning, the pains of labour commenced with considerable activity, and continued with but slight intermission until six o'clock in the evening, when she was delivered of a living infant of healthy appearance. The fœtal head occupied several hours in its passage through the contracted pelvis, and after expulsion, presented on its lateral portion an evident indentation, and was also considerably flattened. The whole process terminated as in a common accouchment. The placenta was expelled with but little assistance, about half-an-hour after the birth of the infant, which was restored in ten minutes by immersion in the warm-bath and by artificial respiration. The child remains at the present time (October 16th) healthy and vigorous, takes the breast freely, and there is every probability that it will continue to live. The patient has not suffered the least pain or inconvenience since her delivery; in short, her recovery was most rapid.

SYDENHAM COLLEGE.

EXPERIMENTS ON THE NERVOUS SYSTEM IN THE TURTLE.

By MARSHALL HALL, M.D., F.R.S.

On Thursday, the 13th instant, Dr. Marshall Hall showed to his pupils some experiments upon the nervous system in the turtle. He first placad before the pupils a diagram, illustrative of the action of the *vis nervosa*, as described by Haller, and, subsequently, by Professor Müller. According to these celebrated physiologists, the vis nervosa acts *only in the direction of the fibres of nerves going to muscles.*

Dr. Hall's first experiment demonstrated the error of this opinion. The head of the turtle being cut off, to remove the influence of sensation and volition, the spinal marrow was laid bare in the dorsal region, and stimulated by galvanism. The anterior as well as the posterior extremities moved. The motor power had, therefore, acted in an *arriéré* direction.

Dr. Hall then proceeded to another experiment. A spinal intercostal nerve was laid bare, and exposed to the influence of the galvanic pile. Again, the anterior and the posterior extremities moved. In this experiment the motor power had taken an *incident* direction *into* the spinal marrow, and had, afterwards pursued a *retrograde*, a *direct*, and *reflex* course to the muscles of the extremities; facts equally new and at variance with the views of Haller, and the laws proposed by Prof. Müller.

Dr. Hall then irritated the *cutaneous* surfaces. Similar movements were produced.

This series of facts demonstrated that the vis nervosa of Haller is identical with the power which acts when, after decapitation, one anterior or posterior limb of an animal

is stimulated and the others move,—a decided step in our knowledge of these motor powers.

Dr. Hall then showed, in a short and familiar lecture, how the motor principles evolved in these experiments must be applied to the explanation of the action of the orifices and sphincters of the animal frame, of the functions of ingestion and egestion, and especially of respiration; and to the pathology of the *class of convulsive diseases*.

These experiments and observations were made at this time, solely on account of the possession of a turtle,—an opportunity which might not be enjoyed at the moment when Dr. Hall proposes to enter fully into the subject of the diseases of the nervous system.

We have received these brief notes from a spectator, who expresses a hope that we will publish a full account of Dr. Marshall Hall's useful labours on this interesting subject.—Ed. L.

CHOLERA MORBUS OF NAPLES.

The following observations by M. Thibault, on the cholera morbus, as it appeared at Naples, will be found to contain several facts of the very highest interest. These remarks were communicated at a late meeting of the Royal Academy of Medicine.

Every one is acquainted with the position of Naples, a city so remarkable for the beauty of its site and the purity of its climate. It is built in the form of an amphitheatre, on one side of the Gulph, the entrance to which is closed by the island of Capri, while the back ground of the prospect is occupied by Mount Vesuvius. Naples is divided into the upper and lower city; it was in the latter that the cholera commenced, and raged with the greatest violence, almost to the end of the epidemic. This lower city is excessively filthy and ill-built, on land newly recovered from the sea, and the population, being poor, is ill-clothed, ill-fed, and crowded into low and badly ventilated habitations. It was on the 29th of November, when M. Thibault arrived; the mortality had then been decreasing since the 24th, at which period the disease had obtained its *maximum*, and was cutting off about 220 persons per diem.

It is unnecessary for us to follow the author through his description of the symptoms and march of the Asiatic cholera; suffice it to say, that these were precisely the same as those which we have witnessed in this country, or in France; the same premonitory diarrhœa for a few days; the same vomiting and purging of a rice-coloured fluid, with cramps; the same obstruction of the circulation; in a few cases reaction and recovery; but in most death. The means employed to bring about reaction were those commonly employed in France. Ipecacuanha was a very favourite remedy, and almost every body was provided with doses of this medicine, to be taken the moment they felt any unpleasant symptoms. Up to the departure of the author from Naples the disease seemed to have spared the localities, in which intermittent and pernicious fevers (*cattiva aria*) habitually reign. The examination of dead bodies was not permitted before the 24th; but since that time M. Thibault, in conjunction with Professor Ramoglia, examined about 150 bodies of persons, all cut off within the fourth or fifth days of the disease. It is unnecessary to follow our author through the minute account which he gives of the post-mortem appearances observed; they were—1. Capillary injection, varying in degree, of the mucous membrane of the intestinal canal. 2. Development of the mucous follicles. 3. A great quantity of thick and viscid mucus lining the digestive canal. 4. Large numbers of worms, particularly of the tricocephalus, in the intestines. 5. Rice-coloured fluid in the stomach and bowels. 6. Vacuity and contraction of the bladder. 7. Repletion of the gall-bladder, with dark thick bile. 8. Distension of both sides of the heart with dark, thick blood; and little difference between arterial and venous blood in appearance.

From the above condensed account it is clear that the post-mortem appearances of the cholera at Naples do not differ from those observed in other countries. The only points which seem peculiar, and worthy of notice, are the presence of a rare species of worm, and of a vast quantity of thick and viscid mucus in the intestinal canal. The discovery of this fact by the young Professor Ramoglia, was at first thought to explain the existence of cholera, for it had been ascertained, beyond doubt, that the appearance of this worm (which is a very rare one) did not precede that of cholera. On mature reflection, however, the Neapolitan physicians determined to extend their inquiries to persons not dying of cholera, and by this sage precaution they have thrown very considerable light upon the nature of that disease. Thus, for example, the presence of the tricocephalus worm was determined in 80 non-choleric bodies (without exception) examined between the 10th of December and the 1st of February. They were generally in less quantity than in the bodies of choleric patients, but occupied the same places, and were exactly similar. But this phenomenon was not the only one common to choleric and non-choleric individuals. M. Thibault also found, in the bodies of persons dying of other diseases than the cholera, the thick, viscid mucus

already described. The mucous follicles were also nearly as numerous, and developed as in choleric patients. In most of the cases, likewise, was found a capillary injection of different points of the mucous membrane of the intestines, analogous to the arborizations of cholera. A great number of the patients alluded to had no trace of diarrhœa at the time of their death. At first the researches of M. Thibault were confined to the abdominal viscera; but, at the commencement of January, on examining the body of a phthisical patient, he was astonished to find both sides of the heart distended with dark coagulated blood. The vascular system was, therefore, for the future examined, and in forty bodies he found the heart and blood vessels containing dark-coloured blood, exactly similar in appearance to that found in the circulating system of persons dying from Asiatic cholera. These facts discovered, rendered it a matter of some importance to determine the nature of the blood drawn from patients not labouring under cholera; but, unfortunately, all the physicians attending on cholera patients were forbidden to enter any of the general hospitals; this obstacle, however, was at length removed; in all cases bleeding was performed from the arm (which is contrary to the usual custom) at the Hospital of Incurables. The blood was much darker and more fluid than is usual; the serous portion which separated formed only the one-tenth, rarely the one-eighth part of the entire weight. The arterial blood could not be examined. It results from the foregoing observations,—

1st. That the cholera at Naples was complicated with one of the most extensive verminous epidemics known in history.

2ndly. That this epidemic was not confined to cholera patients, but affected all the inhabitants of the place.

3rdly. That the most constant cadaveric phenomena of cholera, such as the injection of the intestinal mucous membrane, and the development of the mucous follicles, the alteration of the blood, &c., were also observed in all patients cut off during the epidemic, by all diseases, other than cholera. These facts lead to a most important conclusion, and furnish more tangible evidence of the epidemic nature of cholera, than any with which we are acquainted. They prove that the influence which produces cholera, acts on nearly all the inhabitants of the country in which that complaint rages; and that persons, apparently free from all attack, have, unknown to themselves, undergone modifications, which differ only in degree from those produced by true Asiatic cholera.—*Condensed from the Bulletin of the Royal Academy of Medicine*, No. 22.

SEVERE EPILEPTIC CONVULSIONS CURED BY COMPRESSING THE CAROTID ARTERY.

By M. Trousseau.

On Monday, the 11th of September, 1837, M. Trousseau was called to see, in consultation with Messrs. Chomel, Cerise, &c., a child of eight years, labouring under violent convulsions. The patient had had scarlatina in August, and shortly after, having been exposed to cold, he became œdematous, but only slightly so. The œdema had diminished on the 10th. In the evening the child complained of the head, and he passed an uneasy night. On the 11th he was unusually loquacious; vomited several times, and had most severe pain in the head. At three o'clock a violent fit of convulsions set in; ten leeches were applied to the ears, and sinapisms to the legs. A second attack came on shortly after the first, and when M. Trousseau arrived, he found the child stretched on the bed, with the head firmly thrown backwards; the jaws, eyelids, muscles of the neck, the arm and leg of the right side of the body were agitated with violent convulsive movements; the left side of the body lay quite tranquil; the pulse was tumultuous, 160; the pupils excessively dilated, and the breathing becoming stertorous. Under these circumstances, M. Trousseau proposed the cold effusion, not to exceed half a minute in duration. This was administered, but without effect. The convulsion had now lasted two hours, and life was fast ebbing away, when M. Trousseau conceived the idea of impeding mechanically the flow of blood to the brain. He, therefore, applied pressure to the carotid artery, but, in the hurry of the moment, selected the right carotid. The convulsions continued, and two minutes elapsed before he was aware of his error. The index-finger was now immediately placed on the left carotid artery, and in about fifteen seconds the convulsive movements suddenly ceased, the child falling into a kind of apoplectic stupor. Compression was kept up for an hour more, and, at the end of that time, the state of the child was very satisfactory. The sensibility, however, was perfect on the left side of the body, but was very dull on the right side, which lay completely paralysed. The compression was kept up at short intervals, and a drop of croton oil given, to act as a derivative. The child was somewhat uneasy during the evening, and manifested signs of cerebral excitement, but the convulsions did not return; the paralysis of the right side also disappeared in the night, and on the following day the child was very well. His convalescence was rapid.—*Jour. des Con. Med. Chir., October*, 1837.

THE LANCET.

London, Saturday, October 28, 1837.

It is a curious fact, but one now well established by experience, that corporate bodies, in general, contain some mysterious and, apparently, essential principle, which is ever breaking forth in their actions, and seems to prevent them from keeping pace with the progress of every thing around, and renders them totally unfit to meet the new wants created by existing circumstances.

The members of the corporate body are perpetually renewed; the old and worn-out heads are constantly supplied by a succession of younger and more vigorous intellects, but the corporation itself, in principle, remains unchanged and unchanging, an "Ingens et inutile lignum."

This remark applies, with peculiar force and truth, to our medical corporations, and, above all, to the College of Surgeons and to Apothecaries' Hall,—institutions originally founded for the purpose of advancing the science of medicine, but conducted at present in a manner not only calculated to impede the progress of that science, but, if possible, to destroy it altogether. In confirmation of this latter opinion we may again appeal to our reports of "Examinations at Apothecaries' Hall." While contemplating this faithful picture of the weekly proceedings at Blackfriars, the mind is irresistibly carried back to the days of the Inquisition; to the infancy of anatomy under MONDINI and GILBERT; and to the birth of chemistry under PARACELSUS and his school. It is impossible to reconcile the heartless and capricious conduct of the Examiners at the Hall with the feelings and habits of the nineteenth century; whilst the degree of knowledge evinced in their puerile and frivolous questions, demonstrates that they have been born and elevated to power at least 300 years too late.

But there is no good in brooding over the evils of an existing system, without attempting to eradicate, or, at least, to alleviate them. The task of contemplating the sad and ruinous effects produced by a blind adherence to an existing order of things, would be far too painful were we not cheered by the reflection that a system of so monstrous a nature, so fruitful of abuse of every description, cannot last long. We have hunted the corporation jobbers to the wall, and the day of retribution is at hand. Were they wise in their generation, they would endeavour to retard the moment of dissolution by well-timed concession, or, before retiring into the insignificance and obscurity for which Nature intended them, they would purchase some small measure of grace by one act of liberality and justice. We are not disposed to exact from them the uttermost farthing of the great debt which they owe to the public; we shall be modest and moderate in our demands. Let them but render their examinations *public*, and, for once, we shall acknowledge, that an act of justice has emanated from the Worshipful Company of Apothecaries. We have frequently demonstrated the paramount necessity of such an act. The "cui bono" part is equally evident. To the student it would be useful, inasmuch as he would thereby be stimulated to greater exertion, the public and his immediate friends being, as it were, made parties to his examination; it would be an inestimable benefit to the studious though timid youth, who would infinitely prefer the most searching examination, when fairly conducted before a host of witnesses, to investigations conducted as they now are, in the dark, in a secret chamber, under the privacy of night.

To the Examiners themselves, this change in the present system would not be without some benefit. Privacy is often the source of evil. The bad passions, the private piques, the ill-tempered movements, and the innumerable other circumstances which have full scope during a secret examination, would at once be destroyed; the Examiners would become something more like human beings; their conduct in socia;

life would be ameliorated; for as the slave-master unavoidably carries about with him the habits formed in the cane-field, and the passions generated by a traffic in human flesh, so the habitual tyranny exercised during a long series of secret examinations, must exercise a baneful influence on the social conduct of the individual.

The public at large could not fail to reap some advantage from the substitution of public for the private examinations of men who are destined to watch over the public health. People are far from being aware what species of "doctors" are sometimes sent forth by friendly and partial Examiners. We know one of these "doctors" (by favour of his Examiner) who proposed to bleed a patient in the carotid artery; we are acquainted with another who was on the point of extirpating the kidney. Could such men have passed a public examination? Certainly not. A feeling of shame would have operated on the Examiner, and prevented the commission of an act from which he was not deterred by a sense of justice, or a conviction of the danger to which he was about to expose his fellow-creatures.

A FEW weeks since we published in this Journal the following resolution, which had been adopted in July last by the medical practitioners of Leeds and its neighbourhood :—

"That for the future they will return unanswered the questions which they may receive from insurance companies, unless the letter accompanying them contain a suitable professional fee from the office, considering that the insurance company is the party benefitted by the information thus obtained."

On the subject of this resolution a communication signed "J. R." was printed in THE LANCET of last week. With the exception of the author of that letter, all who have written or spoken on the question have agreed, so far as our observation has extended, that the resolution of the medical practitioners of Leeds is sound in principle, and must work well practically. In a communication which Dr. JOHN SIMS addressed to the Directors of the BRITANNIA LIFE ASSURANCE COMPANY, the point in dispute is thus explained :—

"The plain question is this, Is the opinion of the assured's medical referee of any value, or is it not? If it be, then to whom? To the insurance office, certainly. Consequently, the office ought to pay for it."

The Doctor, without, possibly, being aware of the fact, has argued the case entirely on one side, and even incompletely with respect to a bare *moiety* of the facts. His benevolent desire to aid his professional brethren has induced him to take an exceedingly partial and restricted view of the whole question. In the first place, Dr. SIMS and others appear to consider that there is but *one* class of assurers; whereas policies are effected on the lives of persons under a great variety of circumstances, and frequently when the individuals whose lives are assured are themselves hostile to the proceeding. But, in *the whole* of the cases, whatever may be the costs and charges in the first instance,—from whomsoever the first payments may be made,—it is quite clear that the assurance offices could not maintain their ground if they were not reimbursed, ultimately, out of the premiums which are received from the assured parties. The Company, in truth, is formed for the purpose of carrying on a profitable *trade*; and a moment's reflection will show that the person who desires to be admitted into the concern as one of the assured, wishes to make a profitable investment of a portion of his capital. On both sides there is kept in view certain expected advantages. "Is the "opinion of the assured's medical referee of "any value?" asks Dr. SIMS. "If it be, then "to whom? To the insurance office, cer-"tainly." This is, really, a strange mode of stating the argument. Probably the question can be best explained by a few sentences of dialogue between a Director and a Candidate for a policy :—

Cand. I am desirous of effecting an assurance on my life for the sum of four thousand pounds. What sum shall I have to pay annually?

Director. If your proposal should be accepted by the Board, you will have to pay £200 per annum; but it is necessary that you should accompany your application with a correct statement of your age, and with answers to questions, which will be proposed by us, from your usual medical attendant. You will, also, have to attend here on Wednesday next, in order that you may be seen by our own medical officer.

Cand. Suppose the replies of my medical attendant should not be deemed satisfactory by the Board?

Director. In such a case it is quite certain that you would not be enabled to effect an insurance upon your life in this office, or I believe, in any office in London.

Cand. Is it not sufficient that I be examined by *your own* medical officer?

Director. Certainly not. *He* is *our* witness and guide. We require that you should sustain your application by *evidence*, and *your* medical attendant is the witness whom we call upon you to produce, to prove your case.

Cand. Then my surgeon is to be regarded as my witness?

Director. Certainly; and if he do not give correct testimony in his answers to our questions, your executors would have no ground to enable them to recover the amount of the policy in a court of law.

Cand. You seem to exercise an extreme degree of caution.

Director. It is necessary, or we should ever be liable to suffer by misstatements and fraud.

Cand. Will you pay my surgeon a fee for replying to your questions?

Director. Certainly not. It is enough for us to pay our own witnesses. *Your* surgeon is *your* witness, and without *his* evidence to support your application, the assurance cannot be effected on your life.

What is the condition of the parties if the policy be not obtained? Each shareholder of *the Company* is out of pocket a few pence per annum, by the non-payment of the premium; whereas, by the death of *the candidate*, a wife and two or three infant children may be left destitute of the merest necessaries of life. Were it otherwise, it must be admitted that the principles upon which all associations of individuals are formed have never been understood. Although, therefore, it is undoubtedly true that medical practitioners are entitled to receive a fee for replying to interrogatories which are proposed by insurance offices, yet it is equally certain that the assured's referee ought not, on any principle of justice or propriety, to demand money from the Company. The touch of the coin from that quarter might have a bad effect on the testimony of the witness in a court of law; and we are inclined to think that this view of the question has been entirely overlooked by our brethren of Leeds, as well as by some others of the profession who resice nearer to the metropolis.

Our readers will find at page 154, of this week's Lancet, the results of some very extensive investigations into the mortality observed among the members of the Equitable Life Insurance Society, for a period of sixty-seven years, prosecuted by Mr. Edmonds, a gentleman who is already well known, by his scientific writings on the statistics of mortality, to the members of the medical profession. The materials from which these results have been deduced, consist of a quarter of a million (250,618) of years of life, and of 3,144 deaths corresponding therewith,—all distinguished according to the ages of individuals; and we may observe, hat there exists no other collection of materials wherein the facts observed are more numerous or better authenticated. In one important feature, the Equitable-Office observation is preeminently distinguished from all others, the mortality being there, for the first time, stated according to age (or year) from admission, as well as according to age from birth. In consequence of this novel classification of the materials, the Equitable Office "Experience" proves what has hitherto been merely presumed, namely, that "lives" which are newly selected, or admitted at any age, experience a mortality which is considerably lower than that suffered by other "lives" of the same age.

The materials which form the subject of the present investigation, have never before been noticed or mentioned in any publication. Very few of those persons who are acquainted with their existence, seem to know that these materials have been so

arranged as to afford an entirely new species of information. In the Government Annuity Office there exist very copious materials, similar to those supplied by the Equitable, but the public have never been able to obtain any information from the former Office, although large sums of money have been granted for the purpose of rendering them generally useful and available. There is now, however, some prospect of a redress of this grievance; for a petition to Parliament, praying that some qualified person should be appointed to collect and arrange for publication the materials which lie useless in the Government Office, has been recently signed by the Actuaries of *all* the insurance societies in London. It is desired by the Actuaries signing this petition, that the Government should order to be published (at no greater cost than £400) information similar in quantity and in character to that presented to the public, gratuitously, by the Equitable Society; and in the approaching session of Parliament the aid of every friend of science may reasonably be expected to be directed to promote the prayer of this petition.

NOCTES PSEUDO-PHARMACEUTICÆ.

SPECIMENS OF

EXAMINATIONS AT APOTHECARIES' HALL,

UNDER THE CERTIFICATE SYSTEM, IN THE

TWENTY-SECOND YEAR OF THE APOTHECARIES' ACT.

No. IV.

A Parallel.—"The incompetence displayed by *this* candidate, on every subject, "was as conspicuous as the knowledge of "the rejected candidate who was undergoing "examination at another table, at the same "time,—the ignorance of the present youth "being especially glaring in elementary chemistry, which he was advised by the worshipful Examiners to study *when he was in "practice*, a period close at hand, for *this* young man passed his examination, and "forthwith received the license of the "Company!"—Lancet, *Oct.* 14.

Examiner.—What are the four simple gases?

Candidate.—Oxygen, hydrogen, nitrogen, chlorine.

Ex.—Which is the lightest?

Cand.—Hydrogen, Sir.

Ex.—Ah; how would you obtain it?

Cand.—By passing the vapour of water over iron turnings, in a gun-barrel.

Ex.—From what pharmaceutical processes may hydrogen be collected?

Cand.—From the preparation of sulphates of zinc and iron.

Ex.—How would you know it was hydrogen?

Cand.—By its properties.

Ex.—Very good, indeed, Sir; but I want to know what are those properties?

Cand.—It is inflammable, and a supporter of combustion.

Ex.—Oh no, Sir, it does not support it, although it is combustible.

Cand.—It is very light, and with oxygen it forms water.

Ex.—That will do. What is the composition of the atmosphere?

Cand.—Oxygen and nitrogen, Sir.

Ex.—What proportions?

Cand.—I do not exactly know, Sir.

Ex.—Which is the atmosphere chiefly composed of?

Cand.—Oh, nitrogen, Sir.

Ex.—It is clear you know it, Sir. Is there any carbonic acid in the atmosphere?

Cand.—Yes, Sir; one part, I believe, in a thousand.

Ex. (bows his head)—How is calomel prepared?

Cand.—I should first make a hyper-sulphate of mercury, and then add chloride of sodium, and apply heat, when calomel sublimes.

Ex.—What remains, Sir?

Cand. (hesitatingly)—The sulphate of soda, Sir.

Ex.—Certainly, Sir. What is the colour of calomel?

Cand.—White, Sir.

Ex.—Not exactly; *our* calomel, which, of course, is *always the best*,—

Cand.—Oh, certainly, Sir; there is no doubt of that.

Ex.—Why no, Sir, but I was about to observe, that it always has a yellowish tint.

Cand.—Oh! thank you, Sir.

Ex.—What are the properties of calomel?

Cand.—It is a purgative.

Ex.—Anything else?

Cand.—It is anti-syphilitic.

Ex.—Very good, Sir; but in small doses, what is it?

Cand.—A mild purge, Sir.

Ex.—Is it an *alterative?*

Cand.—Oh, I really beg pardon, Sir, I had forgotten that.

Ex. (smilingly) — What secretion does calomel act on?

Cand.—It stimulates the bile.

Ex.—What coloured evacuations does it produce?

Cand.—Yellowish-green, Sir.

Ex.—What coloured evacuations does it produce in children?

Cand.—The same colour, I think, Sir.

Ex.—No, Sir, they are more of a green colour.

Ex.—What do they resemble, Sir?

Cand.—I really do not exactly know, Sir.

Ex.—*Chopped spinach*, Sir. Do you know any particular cases in calomel?

Cand.—No, Sir, not any particular cases.

Ex.—Would you not give calomel in serous inflammation?

Cand.—Certainly, Sir.

Ex.—Well, you ought to have said that. Why would you give calomel in serous inflammations?

Cand.—To prevent effusion.

Ex.—Yes; but of what?

Cand.—Blood or serum, Sir.

Ex.—Oh, no, not blood—lymph, Sir.

Cand.—I meant that, Sir.

Ex.—Yes, I can see you know it.

Ex.—Would you give calomel in croup?

Cand.—Yes, Sir.

Ex.—With what intention?

Cand.—To relieve the cough, Sir.

Ex.—Very well; but how does it do so?

Cand.—It is an alterative, Sir.

Ex.—It promotes the absorption of the effused lymph, Sir.

Cand.—Oh, that was what I meant, Sir.

Ex.—You would give an emetic in croup, would you not?

Cand.—Yes, Sir.

Ex.—Ah, it causes the effusion into the trachea to be thrown up. You would also bleed?

Cand.—Yes, Sir, if the child was strong.

Ex.—Exactly; what emetic would you give?

Cand.—Ipecacuanha, Sir.

Ex.—What is the botanical name of the ipecacuanha?

Cand.—Cephaelis ipecacuanha.

Ex.—Yes, or Callicocca. Where does it come from?

Cand.—America, Sir.

Ex.—What are its properties?

Cand. — Expectorant, sudorific, and emetic.

Ex.—Not sudorific, exactly; you had better say diaphoretic.

Cand.—Yes, Sir.

Ex.—What kind of emetic is it?

Cand.—It *sickens* the patient.

Ex. (smiling)—Why, yes. Does nausea follow its action as an emetic?

Cand.—Yes, Sir, nausea I meant.

Ex.—What is the action of ipecacuanha in dysentery?

Cand.—It determines to the skin.

Ex.—Very good, Sir. What is dysentery?

Cand.—Inflammation of the intestines.

Ex.—Which, Sir?

Cand.—The large, Sir.

Ex.—Yes, Sir; the mucous coat of the large intestines.

Ex.—Well, Sir, you have a *general knowledge* of your *practice* of *physic*; we will now have a little anatomy. You know it pretty well, Sir, I suppose?

Cand.—Not very, Sir; I am about to work hard at anatomy for the College, Sir.

Ex.—Oh, you have not passed the College. What are the small intestines?

Cand.—Jejunum and ileum.

Ex.—You have left out the first.

Cand.—Oh! the duodenum.

Ex.—What are the divisions of the duodenum?

Cand.—Superior, inferior, and transverse.

Ex.—What vessels supply the small intestines?

Cand.—The mesenteric arteries.

Ex.—Where do the lacteals terminate?

Cand.—At the receptaculum chyli.

Ex.—Where does the thoracic duct empty itself?

Cand.—Into the junction of the subclavian and internal jugular, on the left side.

Ex.—Why does it open there?

Cand.—I really do not know, Sir.

Ex.—Why there are two currents of blood there, are there not?

Cand.—Yes, Sir,

Ex.—Well, Sir, the chyle passing in at that point, becomes mixed with the blood by a kind of twirling, or churning.

Candidate, with an expression of admiration of his Examiner depicted in his countenance, adds that he perfectly understands this ingenious physiological explanation.

This decides his fate—he is regarded as a *pharmacopolist*—and his Examiner winds up by adding, "You have got a good general idea, Sir, of your subjects, and I have no doubt you will make a worthy member of the profession."

BRITISH MEDICAL ASSOCIATION.

Exeter Hall, Tuesday, Oct. 23rd.

The Council of this Society assembled at Exeter Hall, on Tuesday evening last, George Webster, Esq., President, in the Chair. A variety of routine business was transacted, and several short discussions were held on subjects which were deeply interesting to the great majority of the profession. At a late hour the Council adjourned, having appointed the next meeting to be held at the same place, on Tuesday,

November the 7th, at eight o'clock. The notices of motion which stand on the order-book, for consideration at the next meeting, relate to,—

The appointment of a Committee for investigating the mysterious and fraudulent workings of the entire system of quackery.

The appointment of a Committee on the subject of medical abuses arising out of the New Poor Law.

The propriety of instituting, forthwith, as a substitute for the Benevolent Fund, a "Medical Equitable Life Insurance Society," open to all the members of the profession, on the principle of an equal division of profits among the assured.

The expediency of appointing, in consequence of the rapidly increasing business of the Association, a clerk, as an assistant to the Honorary Secretary.

The petition to the House of Commons, praying for the adoption of ONE FACULTY OF MEDICINE, was produced, exhibiting a considerable number of signatures.

Dr. Elliotson and other eminent practitioners forwarded subscriptions to the "Benevolent Fund."

The whole of the proceedings of the Council indicated that the conductors of the Association are under the influence of an honourable as well as an irresistible desire to place the laws and government of the profession on a substantial and just basis. The applications of new candidates for admission to the Association were numerous, and reached the President from a great variety of situations. In our report of the next meeting of the Council, we shall publish the names of the new members. It may be well to remind our professional brethren, that any gentleman who is legally qualified to practise medicine, in any of its branches, in any part of Great Britain or Ireland, is, on application, admitted as a member, on furnishing the Council with proof of his right to practise. The authentication, therefore, of the signature of the applicant, and a reference to the printed list of members of the College of Surgeons, of Licentiates of the Apothecaries' Company, or of the Fellows, Members, and Licentiates, of any of the other chartered and incorporated medical bodies of the empire, with the payment of a guinea, the amount of one year's subscription, are sufficient evidence to obtain for a member of our profession admission into one of the most powerful and respectable medical associations that was ever organised in this kingdom.

The following is a corrected list of the members and officers of the Council:—

George Webster, Esq., President.
Bayfield, T. Joseph, Esq.
Beane, J. Michael, Esq.
Brady, Charles, Esq.
Butler, James, Esq.
Bristowe, J. Lyer, Esq., Auditor.
Castle, John, Esq.
Clarke, John, Esq.
Crisp, Edward, Esq.
Davidson, Robert, Esq., Vice-President.
Delph, Nathan, Esq.
Doubleday, Edward, Esq., Vice-President.
Eales, William, Esq.
Evans, Edward, Esq., Treasurer.
Farr, William, Esq.
Grant, Robert, Esq., M.D.
Hall, Marshall, Esq., M.D., Vice-President
Harrisson, C. H. Rogers, Esq.
Herring, William, Esq.
Hilles, M. William, Esq., Vice-President.
Hooper, Robert Little, Esq., Auditor.
Howell, Joseph, Esq., Auditor.
Hughes, William, Esq.
Hull, George, Esq., M.D.
Ireland, Charles G., Esq.
Lane, George D., Esq.
Linnecar, Edward H., Esq.
Liston, Robert, Esq.
Menzies, Robert, Esq.
Parsons, George, Esq., Vice-President.
Pilcher, George, Esq., Vice-President.
Porter, Thomas, Esq.
Smith, J. J., Esq.
Wagstaffe, Matthew F., Esq., Hon. Sec.
Wakley, Thomas, Esq., M.P.
Whitmore, Henry, Esq.

ALLEGED CASE OF FRACTURE OF THE BASE OF THE SKULL.

To the Editor of THE LANCET.

SIR:—In the last number of your Journal, p. 88, you have inserted an account of a case of fracture at the base of the cranium, as forwarded to you by me, having my name attached to it, and as having occurred in the institution to which I have the honour, as pupil, still to belong. I shall feel obliged by your disabusing the readers of THE LANCET of the impression such an account was intended to convey; leaving to you and to them to appreciate the motives, and to determine how much credit is due to the statement, of an individual who would commit such a vile, unwarrantable forgery. I am, Sir, your obedient servant,

F. G. BULL, Pupil.

Northampton Infirmary,
Oct. 17, 1837.

A CORRESPONDENT has favoured us with the following circular. It was addressed to a Member of Parliament residing in Ecclestone-street, Pimlico:—

"Dr. Duncan begs to announce his residence at No. 1, Watkin's-terrace, Ebury-street, Pimlico, where, agreeably to urgent invitation, he intends to devote himself, as for many years past, to the general practice of medicine and midwifery.

"In commencing practice in this neighbourhood, and on this account alone, Dr. Duncan deems it necessary to state, that he has been twenty years in practice, three of which he has lately passed on the Continent, where he visited and minutely observed the practice of some of the principal medical establishments.

"From a long and extensive practice, public as well as private, Dr. Duncan presumes on a continuance of that distinguished patronage with which he has hitherto been honoured. A long list of names of the highest respectability might be adduced in support of his claim to the confidence of the public, but the following may be deemed sufficient. Dr. Duncan has had the honour of attending, professionally, members of the families of

"The Duke of Richmond; the Marquis of Anglesey; the Marquis of Bath; the Earl of Aberdeen; the Earl of Maryborough; the Earl of Shrewsbury; Lord Rodney; Sir Henry Halford, Bart.; Sir J. W. Gordon, Bart.; Sir Wm. Mansell; Mr. Robert Keate, Surgeon to his late Majesty; Mr. Legaré, American Chargé d'Affaires; the Hon. Capt. Dashwood, R.N.; Lt. Col. T. N. Harris."

As Dr. DUNCAN has given such a special reference to his residence at Number 1, Watkin's-terrace, where—Heaven help the condition of our medical government!—our correspondent is very anxious to learn, *where* the doctor resided on the Continent, as well as previously to his entrance on his *foreign travels*.

MESMERISM ATTEMPTED ON JOHN HUNTER.

I WAS asked to go to be magnetized, but at first refused, because the spasm on my vital parts was very likely to be brought on by a state of mind anxious about any event. Thus, at my country box I have bees, which I am very fond of, and I once was anxious about their swarming, lest it should not happen before I set off for town; this brought it on. The cats tease me very much by destroying my tame pheasants, partridges, &c., and rooting up my plants. I saw a large cat sitting at the root of a tree, and was going into the house for a gun, when I became anxious lest she should get away before my return; this likewise brought on the spasm. Other states, where my mind is much more affected, will not bring it on. Now, I feared lest my anxiety for the event should bring on the spasm, and that should be imputed to animal magnetism. But considering that if any person was affected by it, it must be by the imagination being worked up by attention to the part expected to be affected, and thinking I could counteract this, I went; and accordingly, when I went, I was convinced, by the apparatus, that everything was calculated to affect the imagination. When the magnetizer began his operations, and informed me that I should feel it first at the root of my nails of that hand nearest the apparatus, I fixed my attention on my great toe, where I was wishing to have a fit of the gout; and I am confident that I can fix my attention to any part until I have a sensation in that part. Whenever I found myself attending to his tricks, I fell to work with my great toe, working it about, &c., by which means I prevented it having any effect on me.—Works of Hunter, by J. F. Palmer, vol. I. Lectures, p. 337.

UNION OF STOW.

To the Editor of THE LANCET.

SIR:—By the THE LANCET of the 21st inst., Mr. Bree, of Stowmarket, has not "obtained *his* information from a correct source,"—at any rate, with respect to the Walsham district, even if he have from the other two Unions; for he asserts, that Mr. Kent appoints Mr. Freeman to attend the parish of Walsham, and Mr. Bansham to attend the poor of Norton. Nothing can be more untrue. Mr. Freeman *lives* at Walsham, and Mr. Bansham at Norton, but *Mr. Kent* attends the poor of *both* those parishes, and, moreover, he attends the poor of the parish of Elmswell, which is nearly, if not quite, *seven miles* distant from Mr. Kent's residence; and consequently the poor have actually to go *through* Norton (where Mr. Bansham lives) in order to get to Mr. Kent's for a dose of jalap. The poor of Norton have also to go *four or five miles*, and the poor of the two parishes of Hunston and Stowlanestoff (adjoining parishes to Norton) have likewise to go to *Mr. Kent*, instead of going to Mr. Bansham, *as they used to do* before the base Malthusian law was put in force by Doctor Kay, Chadwick, and Co. I am, Sir, your most obedient servant,

J. H.

October 23rd, 1837.

*** This letter, which contains some not unimportant facts, has been authenticated by the writer.

MEDICAL SOCIETY OF LONDON.

Monday, October 23, 1837.

Mr. BRYANT, President.

FUNCTIONAL DISORDERS OF THE HEART.—GLUTTONY.—INSIDIOUS ORGANIC DISEASES.

Dr. J. JOHNSON, in reference to the discussion of last week, said that he agreed with those who thought that functional disorders of the heart were much more frequently mistaken for organic changes than *vice versa*, and this was the case particularly as regarded gout. When gout was suspended for a time, it was common for the pulse to become quick and throbbing, and the heart to palpitate violently, exciting great alarm, and leading to the supposition that the heart was organically affected. All the symptoms were, however, at once removed on the recurrence of the gout. Cases of functional disorder simulating organic change, were mentioned by many authors. Dr. Parry, of Bath, had recorded a case in which the heart's action was so violent as to wear away the ribs; yet even in that instance, after death, the symptoms having previously ceased, the heart was found healthy. It was a common error of young practitioners, to consider the heart as organically diseased when its function only was much interfered with, and this error had become more general, he was sorry to say, since the stethoscope had come into use. He had known various symptoms of affection of the heart, such as its beating over a larger space than natural, &c., all give way before the restoration of the general health, and the bracing of the nervous system. When the uterine function was not properly performed, it was common for the patient to suffer from palpitation for weeks together; yet this entirely ceased on the organ resuming its healthy action. On the other hand, however, it must not be forgotten, that organic disease might creep on even to a fatal termination, without the occurrence of any symptoms to indicate its seat or nature. In illustration of this fact, he might mention the following case, which had come under his observation:—Five years since he was called to see a gentleman who had suffered from hiccough of a violent character for fourteen days. All the means used for its removal proved useless; but it eventually gave way under the use of large doses of musk. The patient then informed him that for several years he had suffered from "a load" just below the epigastrium, and about the umbilical region, and said he should certainly die from it. The patient was a corpulent man, and lived generously, particularly as regarded food. The "load" was the only symptom he complained of; and, on examination, there was no hardness, tenderness, or other sign of organic change in the abdomen. He consulted most of the eminent practitioners in London, all of whom told him his disease was merely imaginary; he still, however, persisted in believing it a fatal one. Nine or ten months since he began to lose flesh; his appetite failed him, and he got weak, yet he only complained of the load. The abdomen was again carefully examined, but nothing was detected. For six or seven weeks before death, he kept his bed, lost his appetite entirely, and ejected most of the little nourishment that was administered to him. His pulse varied from 110 to 130. Soon after being confined to his bed, he had another severe attack of singultus, which lasted twelve days, and eventually was removed by arsenic, which had the effect also of putting a stop to periodic rigors and fever, to which he had become subject. He got gradually weaker, and died, worn out by hectic, without any suffering. He (Dr. J.) had considered that he perished from the "climacteric disease," the general functions of the body having given way without the occurrence of organic change. The post-mortem examination, however, revealed the true state of the case. The stomach, lungs, heart, intestines, and liver were found healthy. The gall-bladder was almost entirely filled with a large number of calculi; the duct was free. The right kidney was sound; the left somewhat granular. Surrounding the left psoas muscle was a bag, or sac, which contained about a pint and a half of a dark, farry, gelatinous fluid, of a most offensive odour, and peculiar appearance. The psoas muscle was so much disorganised, as to be with difficulty detected. Now, here was extensive organic disease, which had gone on for months, at least, though he did not think it had existed for years, without producing any local symptoms; there was great constitutional disturbance, indeed, but it could not be traced to any cause. He thought the calculi might have existed in the gall-bladder for years, but attributed the fatal result to the other disease. He believed that many diseases which were supposed to be climacteric, or a regular "break up," as Sir H. Halford called them, could, by proper examination after death, be traced to some organic change.

Mr. PROCTER agreed with Dr. Johnson regarding the frequent occurrence of functional disorders of the heart. Commercial speculations particularly favoured these disorders; he had noticed that they were very prevalent during the railway mania. Quieting irritation, and restoring the general health, were the best remedies.

Mr. HEADLAND had noticed the falling away of the strength and appetite, and great emaciation, for three or four months, in two patients of his, in whom there was no evidence of organic disease; the patients were both men of intemperate habits; the most

remarkable symptom in both cases was the total absence of sleep, in the procuring of which narcotics of the strongest kind had no sort of effect. In one of these cases, after death, a fungoid growth, weighing from one and a half to two pounds, was attached to the lower part of the capsule of the left kidney; the other patient had simple hypertrophy of this organ. In neither case did a single symptom of organic affection of the kidneys exist. The urine was scanty in both instances.

Dr. J. Johnson said, that he had seen many deaths from intemperance; the absence of sleep before death, in these cases, was common; drunkards at this period paid a severe penalty for their intemperatehabits.

Mr. Bryant recollected a case which had occurred to him some years since, in which the patient, a gentleman aged 70, died with symptoms very much resembling those which had occurred in the case related by Dr. Johnson. The patient was an intemperate man, and had been long ailing. When he (Mr. B.) was called to see him, he had suffered from unceasing hiccough for several days, and to this nothing afforded relief. Dr. Farre also saw the patient; it was concluded that there was organic disease of the stomach. He sunk gradually. The gall-bladder was found full of biliary calculi, the stomach was darker than natural, but nothing more. The patient had complained of pain about the right kidney, but he referred no other symptom to the urinary organs; the urine was natural. The right kidney was healthy, but below it was a small pouch containing about two ounces of stinking pus; the disease was connected with diseased vertebræ. Here was a case in which disease gradually advanced in an important part, without its exact seat being detected during life.

OPIUM EATING.

In the course of the evening some facts were stated regarding the administration of opium, and its preparations, in delirium cum tremore; and also as to the extent to which opium-eaters carried their doses. Mr. Procter had known six or eight drachms of laudanum administered to a patient with delirium cum tremore, in twelve hours, with good effect.* Mr. Leach, in a case of insanity, had given two grains of muriate of morphia, every six hours, to a lady (having begun with quarter of a grain doses), with the effect of producing only ordinary sleep, and removing the erroneous impressions. Mr. Headland had attended an opium eater, who swallowed 17 or 18 grains of acetate of morphia daily. And Mr. Roberts had known an individual who daily indulged in a pint and a half of laudanum.

* An interesting case of asthenic delirium will be found at p. 807 of Vol. I. of The Lancet for 1835-6. In this instance, the muriate of morphia was given in one-grain doses, every two hours, for several days, and one day the patient took a grain every hour during the twenty-four. He improved considerably under the treatment, but the delirium returned, and the patient, who was under Dr. Elliotson, at *University College Hospital*, was discharged for being riotous. —*Rep.* Lancet.

WESTMINSTER MEDICAL SOCIETY.

Saturday, Oct. 21, 1837.

Dr. Jones Quain, President.

The President opened the proceedings by making known some of the resolutions passed by the committee, of which the most important were the following:—That printed cards of the subjects appointed for each evening's discussion shall be issued; that a case, or cases, with accompanying observations, shall be considered equivalent to an original paper, and worthy of occupying the attention of the Society; that the standing law with respect to the length of communications be enforced; namely, that they be sufficiently short to be read through in half an hour.

The President announced the retirement of Mr. Thurnam from the office of secretary.

The Society then proceeded to the nomination of members to fill the vacant offices of president, vice-president, and members of the committee.

SPLITTING OF THE HEAD OF THE HUMERUS.—DEMI-DISLOCATION.

Mr. Hale Thompson mentioned to the Society a case of a peculiar injury to the shoulder, which he believed to be of exceedingly rare occurrence. William Cadman, a plasterer, æt. 28, was brought into the *Westminster Hospital* on the 26th of June, having fallen from a height of fifteen feet, in consequence of a ladder slipping from under him when at work. On coming to the ground he struck the left shoulder against the side of the ladder, and was immediately brought to the hospital. Tumefaction and tension were so great as to admit of but very imperfect examination for the first three days; after which it was found that the head of the humerus was cleft in two, the anterior and largest portion being thrown out of the glenoid cavity, so as to resemble dislocation forwards, whilst the posterior third of the head remained in its natural position. No means that could be suggested could keep the dislocated portion of the head of the bone in its proper place, and Mr. Thomson wished to learn from the experience of the members of the Society what motion might be expected in a shoulder-joint so injured.

Mr. COSTELLO thought that the interspace between the fragments would become filled with ossific matter, and superiorly be covered in with ordinary articular tissue. He considered that the functions of the joint would ultimately be almost wholly recovered.

Dr. JAMES JOHNSON was of opinion, that the motions of the arm would prevent ossification from taking place; a view in which he considered himself amply borne out by general experience in analogous cases. He wished to know how soon after the accident its exact nature was ascertained.

Mr. H. THOMPSON replied, on the third day. The attempt to retain the head of the bone *in situ* after reduction, was continued unsuccessfully for nearly an hour. The tendon of the biceps was distinctly felt under the skin. What struck him especially, and, from the first, made him think there was something unusual in the case, was the facility with which the head of the bone changed its position. He differed from Mr. Costello in supposing that bony deposition would take place, and thought that, as in the case of fractured patella, the union would be ligamentous only. The latter, indeed, would be the most advantageous for the patient.

After a few observations from Mr. COSTELLO, and a promise on the part of Mr. Thompson to endeavour to bring the patient before the Society at the next meeting, the conversation dropped.

SOLUTION OF ALUM.—DISSECTION WOUNDS.

Dr. J. JOHNSON considered it worth while, now that dissections had begun for the season, to remind the Society of a statement made by Dr. Macartney at the late Liverpool meeting. It was to the effect that he (Dr. M.) had been able to prevent any bad results from wounds received in dissecting, both in his own person and in those of his pupils, by keeping the part constantly wet for two or three days with a saturated solution of alum.

Mr. H. THOMPSON denied Dr. Macartney's claim to originality in this therapeutic use of alum, as the late Mr. Brookes was in the habit of using the same solution for the same purpose; a quantity of it was constantly kept in the dissecting-rooms for the use of students.

Dr. J. JOHNSON, in answer to a member, said, that Dr. Macartney explained the action of the alum by its extreme astringency, which, as it were, cauterized the absorbents. If this were the case it would (as a member suggested) act on the hydrophobic poison as effectually, except that the latter might remain latent in its effects for several months.

The PRESIDENT considered the plan of washing the wound well, sucking it, and then applying nitrate of silver, the most effectual. According to his experience such was its efficacy that only one death took place in a number of years among the pupils at the dissecting-rooms to which he was attached.

Dr. EPPS was of opinion that so much water would be quite as efficacious as a solution of alum, and considered it very defective reasoning to attribute any specific action to the aluminous liquid, because recovery took place under its use. According to him it acted simply from its moisture in washing away the poison, or in the same manner, as it were, as the suction recommended by the President.

Mr. J. G. SMITH affirmed, that ill-consequences from wounds received in the dissecting-room were of comparatively rare occurrence; that they most generally succeeded injuries received in opening recent bodies, especially such as died from serous inflammation, and, above all, puerperal peritonitis. The state of health at the time of the wound exercised a very important influence on the nature of its effects; the latter seeming to be serious in proportion to the badness of the former. He was disposed, viewing the extreme rapidity of the progress of such cases, to doubt its being by the lymphatics that absorption takes place.

Mr. H. THOMPSON thought there was more virtue in alum that Dr. Epps imagined. He considered that it prevented absorption in the same manner as the celebrated alkaline solution used for the prophylaxis of syphilitic infection. To him it seemed unphilosophical to say that a wet rag sucked out the poison; no sponge-like property could be ascribed to it.

Dr. WILLIAMS was inclined to explain the effects of the alum by its chemical action on the fluids. Its power of coagulating the blood, in consequence of which it was recommended by Dr. Scudamore as a styptic, was well known. He was of opinion that many agents were capable of decomposing the poison, and that the evil consequences sometimes ensuing resulted from neglecting to use known remedies.

UNIVERSITY COLLEGE HOSPITAL.

LARGE DOSES OF MEDICINES.—LARGE BLEEDINGS.—FALSE REPORTS.—SLANDER BY A PHYSICIAN AND PURE SURGEON.

At his second clinical lecture this session, Dr. ELLIOTSON said there was a topic to which he had forgotten to allude in his first lecture, that of his being charged with giving large doses of medicines. But, before he spoke of it, he would relate an instance which had just occurred, which would show the bad feeling which actuated certain persons. He was lately consulted in a case of hooping-cough, accompanied by bronchitis, occurring in a child. The general

practitioner who was in attendance, was an experienced and highly-intelligent and conscientious man. He had been giving extract of belladonna internally, to relieve the spasmodic cough, and was employing antiphlogistic measures for the removal of the inflammatory affection.

Dr. E., himself, had never used the extract of belladonna internally in this disease, but he was assured by the gentleman in attendance, that he had frequently given it in pertussis with considerable benefit, having got the information of its value from Dr. Williams, of Half-moon-street, he (Dr. E.) felt it would be ungentlemanly and unjust to interfere with this experience, as the child was going on well. He said he would not allow his experience to interfere with that of this gentleman. The consultation, therefore, had reference to the bronchitic affection. The gentleman in attendance happened to mention to the family, one day, that the child was taking belladonna. The parents became alarmed, and as they were in some way connected with a person in a life-assurance office, they inquired, through him, of the physician and surgeon to that institution, whether belladonna was a safe medicine to give internally. The physician and surgeon lifted up their hands in disapprobation of the practice, and the *pure* surgeon said, "No one would give the extract of belladonna, internally, in any disease, but Elliotson!" Now it happened that, in fact, Dr. E. had never administered this medicine internally in his life. In consequence, the friends allowed the medicine to be given no longer. The gentleman in attendance felt so much hurt that he called on the surgeon. This individual then said that he only spoke to the friends in *confidence*. This kind of slander, said Dr. Elliotson, was cowardly, and a thousand times worse than blazing forth condemnation in the journals boldly with a name; it was an assassin-kind of slander, from which there was no means of defence. The other was infinitely less discreditable. The individual added that he regretted it, and it showed how careful we should be. Careful? said Dr. Elliotson, a man stabs another in the dark, and then says, "It was done in confidence!" and when he is found out, "it showed how careful we should be." Dr. Elliotson made it a rule never to condemn the practice of another man: he might condemn practice in the abstract, but not the practice of another in a particular case; and if there was a difference of opinion, he felt it right always to conceal it, and also to shield, as much as possible, anything that might be amiss, in order that the confidence of the family in their attendant might be kept up, (except in cases of gross ignorance), and public opinion be as favourably inclined towards the profession as possible. He had been accused of giving large doses of medicines. Now it was, in fact, the reverse. In chronic cases he began with the smallest quantity of medicine, far smaller than most begin with; so small, indeed, that many were surprised; but if this dose did no good, or did not disagree with the patient, then he went on increasing it till some effect was produced; always, of course, cautiously watching its progress. This was his peculiarity, if, indeed, it was a peculiarity, respecting medicines. Some practitioners give a dose of physic, and keep to that dose for weeks or months together, never increasing it, though it never took any effect. The only philosophic mode of giving medicines in chronic cases, is to begin with a dose that is likely to agree perfectly; and slowly to increase it till some effect ensues. Thus, indeed, he often arrived at large doses; but to stop short of any quantity requisite to produce the end, so long as it agreed with the patient, would be absurd; and by such silly practice many cases were not cured that might be cured. As to what was called the "accumulation of medicines," he believed that there was much fallacy in the supposition. When a medicine was said to have accumulated, he believed the fact to be, that it had been continued after it had began to produce an effect. When once a medicine had begun to produce its effect, however slightly, the smallest further exhibition told strongly, and violent results might take place. There was a saying that it was the last feather that weighed all down. So it was with medicines. If the practitioner did not watch most carefully, but gave doses, or even one dose, after an effect was produced, he might be surprised by a violent action. He (Dr. E.) never gave a dose of mercury without it being ascertained that the breath and gums had not been affected since the previous dose. He never gave a dose of hydriodate of potass until it had been ascertained that the previous dose had not affected the head, the stomach, or the bowels. With this care they might practise safely, and steadily augment their doses; and not once in a hundred cases could they be surprised by a sudden effect of their remedies. As to bleeding, no one could be more cautious; he always took away as small a quantity as possible, placed the patient in an upright position, and bled from a large orifice to produce the greatest effect with the least loss. One medicine, indeed, he was in the habit of giving in large doses, early, and that was the carbonate of iron. He had not, however, given these large doses until he had ascertained that they were much more effective than smaller ones, and perfectly safe.

When he published his first paper on this medicine, he was not sure of this fact, and merely informed the profession, that it *might* be given in large doses. He afterwards as-

certained it, and then he published his second result; and, as the medicine is so mild and harmless, he always gave it quickly in large doses, particularly in chorea, and with the greatest success. He had mentioned the above facts, but the evil and malignant reports which had gone abroad could not hurt him; indeed, the late treatment he had received had rendered him the greatest service. When gentlemen saw his practice they were at once undeceived, and saw the falsehood and malignity of the slanders propagated respecting it. He begged them not only to observe his future cases carefully, but to read all the accounts of his cases from the opening of the hospital, and they would see the absurd tales of experiments, large doses, and large bleedings all falsified together.

He always urged it upon his pupils, as a rule of practice, never to give a particle more of any medicine than was necessary; never to give a grain if they were satisfied that half a grain would answer their purpose.

ST. GEORGE'S HOSPITAL.

DISEASE OF THE HEART.—GANGRENE.

William Rogers, ætat. 30, was admitted under the care of Dr. Seymour. He states that for some months past he has been attacked with a severe cough, which was at first dry, but is now attended with a very copious expectoration. He has never spit blood. He has, for the last month, had several severe shivering fits, and complains of great pain in the limbs. He was ordered beef-tea and arrow-root for diet, and the following saline draught was to be taken three times a day.

Solution of acetate of ammonia, three drachms;
Compound spirits of sulphuric æther, half a drachm;
Camphor mixture, ten drachms.

A blister to be applied over the chest.

May 25. This morning, soon after waking up, he was severely attacked with dyspnœa, which, at the time of Dr. Seymour's visit (one o'clock), had scarcely subsided; there was a very heavy and laboured mucous râle which could be heard at some distance from the bed. He has taken one scruple of powdered ipecacuanha by the apothecary's advice, but which has not relieved him in the least. He was ordered to be raised in bed, and if the urgency of the symptoms did not subside, to be bled. In the evening the dyspnœa continued very great; the pulse suddenly became oppressed, severe pain in the head ensued, and a slight paralysis of the muscles, on the right side of the face, soon became evident. He was immediately bled to twelve ounces. Five grains of calomel were given, and a strong senna draught immediately afterwards.

26. The paralysis is less than yesterday; but there is still much pain and confusion in the head. The pulse is 84, and full. Bowels well opened by the medicine. Blood was neither buffed or cupped. He was ordered to be immediately cupped to twelve ounces, and a blister to be put on between the shoulders. A saline effervescing draught every four hours.

27. The pain in the head was relieved by cupping; he feels better. The tongue, when protruded, is nearly straight; bowels copiously relieved. He has had two smart rigors since last night. Two grains of chloride of mercury and half a grain of opium were ordered to be taken every four hours, and the saline draught continued.

28. He is suffering severely from pain in the right leg, which is swelling in its whole extent; the surface is preternaturally cold to the touch, and it presents all the marks of incipient gangrene. The compound camphor liniment was ordered to the leg.

29. The mouth is more drawn to one side than ever it has been; the breathing is easier; pulse 100, and regular; tongue moist; bowels open. The limb is in a state of mortification.

31. Comatose, and breathing principally through the diaphragm. He died at half-past eleven at night.

Autopsy, 24 hours after Death.

Thorax.—On laying open the pericardial cavity the heart was found in a general state of hypertrophy, especially on the systemic side; its external surface adhered extensively to the lining membrane of the pericardium, which latter membrane presented several osseous surfaces. The mitral valves were extensively thickened and diseased, having the appearance of fibrine; the edges were rough and irregular, and studded with bony points; several of the chordæ tendineæ were thickened and ossified, as were also the aortic valves; the lungs were generally engorged with dark blood, and the right one adhered to the pleura along its entire lateral surface.

Cranium.—The brain and its membranes presented no particular morbid appearances to account for the facial paralysis; perhaps the sanguineous surfaces were more numerous and extensive upon the cerebral masses being sliced than is natural.

Abdomen.—The stomach and bowels, the pancreas, spleen, and kidneys, presented no morbid appearance worthy of notice; the liver was hard and enlarged, and presented the common nutmeg appearance.

Lower extremity.—In the tube of the femoral artery of the limb of the gangrenous side, there was found a thick deposit of lymph just below where the profunda artery was given off, and which completely prevented the flow of blood lower down the

limb. The tibial artery of the same side was studded with ossific deposits along its entire course.

ENCYSTED OVARIAN DROPSY.

Hannah Davis, aged 26, was admitted under the care of Dr. Seymour, with the following symptoms:—She states that about eighteen months since she first perceived a tumour on the right side, near the iliac region of the body; it gave her no particular pain, and the only inconvenience was from the great abdominal distention which it caused. The swelling gradually increased in every direction, and the abdomen is now much fuller and larger than natural; the menstrual secretion is regular, but scanty in quantity; the pulse small; tongue white and moist; her general health has suffered very little. Dr. Seymour states the fluctuation to be distinct; but we were not permitted to satisfy ourselves upon the point. The legs and feet are not swollen.

She was ordered ordinary diet, and to take one drachm of the *solution of potash* in fresh small beer, three times daily; and to have the following never-failing enema for dispelling flatulency administered every other night:—

Confection of rue, three drachms;
Infusion of camomile flowers, twelve ounces.

June 2. The *solution of potash* was ordered to be continued four times daily, as her system appeared to bear it well.

3. She complains to-day of her right leg swelling; there is great pain in each hip when she stands, but which is relieved on her keeping the recumbent position; there is also great pain and oppression at the epigastric region when she lies on her back, as well as an excessive degree of dyspnœa, arising partially from an increase of abdominal fullness, but mostly from the too-frequently-repeated dose of the solution of potash.

5. She has continued all her medicines up to this day, but without any material benefit, all her symptoms being much aggravated, and the abdominal distention considerably increased.

6. To-day she was tapped by Sir B. Brodie; two pails full of serous fluid, intermingled with flakes of lymph, were drawn off; it was ropy, and of a greenish colour, an appearance which, in cases of encysted ovarian dropsy, we have frequently met with: the latter part of the discharge was yellow, and mixed with some blood. Although the discharge of fluid was copious in quantity, there yet remained much abdominal swelling, most probably arising from solidification of the contents of the ovarian tumour.

She was ordered to take the following anodyne draught immediately, and to repeat it at bedtime:—

Compound spirits of sulphuric æther, half a drachm;
Tincture of opium, twenty minims;
Camphor mixture, two ounces.

7. The abdominal distention remains the same; there is no pain on pressure; the urinary secretion is increased; she has passed a quiet night, but is troubled with some hysterical hiccoughing. She was ordered to take *half an ounce of castor oil* in *peppermint water* immediately, and to have the *anodyne draught* repeated at bedtime.

8. The castor oil has relieved the bowels; the abdomen is less in size, and free from pain; the tongue is moist and clean; pulse 74. The *anodyne draught* at bedtime.

9. To-day she is not so well, and complains of great epigastric pain after taking food; there is great abdominal tenderness upon pressure, resulting evidently from inflammation coming on in the cyst, which, after much deliberation, Dr. Seymour thinks may be only probable. The appetite is bad; pulse 84, and feeble; tongue white and dry; very uneasy, anxious, and restless. Notwithstanding Dr. Seymour's "probability" only of internal inflammation, he ordered her to be immediately bled to 12 ounces, and to take a *saline effervescing draught* three times a day, and the *anodyne draught* at bedtime to be continued.

12. The pain and tenderness of the abdomen are relieved, but the distention is as great as before. The *solution of potash* was again resorted to as before, and one drachm of *mercurial liniment* was to be rubbed in over the abdomen every night and morning.

17. The swelling is as great as ever, and she complains of much pain and pressure on the right side over the iliac region; the pulse is 100, quick and sharp.

Hydriodate of potash, three grains;
Cinnamon water, one ounce and a half.
To be taken twice daily.
Hydriodate of potash, one drachm;
Lard, half an ounce. The size of a walnut of this ointment to be rubbed in over the abdomen every night.

19. She feels better to-day, and has experienced more relief from these medicines than from any she has taken since she came in. She can lie down, and walk also, with much greater ease than before. The medicines were ordered to be continued.

23. Continues much the same; the abdomen is, however, again enlarging, and the legs swell and pit upon pressure; the bowels are relaxed, and the urine is increased in quantity.

28. The increased swelling of the abdomen gives her very much pain and uneasiness; there is decided fluctuation, and she is frequently troubled with severe vomiting from the stomach being pressed upon, to relieve which *a saline effervescing draught*, with *tincture of opium*, was ordered to be taken three times a day.

30. Tapping was again resorted to. It was "done" by Mr. Cutler, the junior assistant-surgeon. Upwards of eleven pints of thick greenish-coloured ropy fluid were drawn off, which coagulated with heat. An *anodyne draught* was immediately administered after the operation. The *hydriodate of potash* was ordered to be discontinued.

July 3. The symptoms are precisely the same as those after the previous operation. The abdominal swelling and distention are again nearly the same as before the operation.

6. She complains of much sickness; there is no pain on pressure; a slight discharge of water is kept up from the wound. The following was ordered:—

Hydriodate of potash, four grains; *Distilled water*, ten drachms. To be taken twice daily; *Opium* to be taken every night at bedtime.

7. She rested well last night from the pill, and feels somewhat better this morning; there is much discharge from the puncture.

8. She has had several distinct shivering fits since yesterday, and been much troubled with sickness. She is now suffering much from severe frontal headach, which she says is similar to the symptoms she had when labouring under inflammation of the brain, after her confinement six years ago. There is great tendency to syncope; the discharge from the orifice made by the trocar continues.

20. To day she requested to be allowed to go out of the hospital as she did not feel any better. This was, indeed, the fact; the medicines had been of little, if of any, service to her; she had undergone two operations without the slightest relief, and was altogether much worse and in a weaker state than when she came in.

ASCITES.

William Burrowes, ætat. 24, was admitted under the care of Dr. Seymour. The abdomen is regularly distended through its whole extent; there is general hardness over the hepatic region, with much pain on pressure, and the inferior edge of the large lobe can be distinctly felt much lower down than natural. He confesses to having been a consummate porter drinker. Both legs are much swollen, and have been so for upwards of a month. He denies ever having had the ague. The countenance is not emaciated.

He was ordered to be put on fish diet. The mercurial liniment was ordered to be rubbed in over the abdomen every night, and *four grains of the chloride of mercury* were to be taken every night, at bedtime, with the following draught, for every alternate morning:—

Tartrate of potash, three drachms;
Tincture of senna;
Compound tincture of cardamoms, of each one drachm;
Infusion of senna, ten drachms.

May 26. Much the same; the morning draught causing some vomiting in the forenoon, the *bitartrate of potash* was ordered to be taken in plain water.

27. He was attacked this morning at breakfast time, with severe pain in the hypogastrium, which gradually extended all over the abdomen, and was accompanied with much vomiting, from which he is now suffering very severely. The *bitartrate of potash* was ordered to be omitted for the present, and the abdomen to be well fomented with a warm *decoction of poppies*.

31. He is better to-day; the urine is increased in quantity, though it is much loaded with the phosphates, and the bowels are very freely opened.

June 2. He complains very much of pain in the epigastric, and both hypochondriac regions and the abdominal swelling is still very great. The medicines to be continued for a few days, until he can bear tapping.

5. He was tapped yesterday, and upwards of thirty pints of clear yellow serous fluid were drawn off. He bore the operation very well, but was much exhausted when put into his bed. The following draught was ordered to be taken directly, and repeated at bedtime:—

Compound spirits of sulphuric æther, one drachm;
Tincture of opium, twenty minims;
Camphor mixture, ten drachms.
Half an ounce of *castor oil* to be taken early to-morrow morning.

8. He has passed more urine since the last report, and he has been taking the *nitre draught* twice daily in the meantime. This was discontinued, and a *saline draught* ordered instead, with two drachms of the *infusion of digitalis* in each, to be taken three times daily. One grain of *opium* to be taken every night at bedtime; and ordinary diet for dinner, breakfast, tea, and supper.

15. He has somewhat improved since the last date; the urine flows copiously, and he has not "the suffering countenance" he had some days since. To each draught he now takes there is an addition of two drachms of the *solution of the bichloride of mercury*.

17. He complains very much of griping pains in the bowels and severe sickness. The medicines were ordered to be discontinued, and the following substituted:—

Blue pill, three grains;
Squill in powder, one grain;
Powdered foxglove, one grain. To be taken twice daily;

and the following draught to serve as "a wash" for every pill:—

Tincture of squill, twenty minims;

Spirits of nitric æther, one drachm;
Nitre draught, eleven drachms.

20. The urine still flows in considerable quantity, yet the abdominal swelling is increasing. The following was ordered:—

Elaterium, half a grain;
Powdered capsicum;
Chloride of mercury, of each three grains. To be taken early every other morning. Warm beef-tea to be taken during its operation.

22. The *elaterium* does not agree with him; he is very sick, and suffers most excruciatingly from abdominal tormina, for the relief of which he was ordered,—

Chloride of mercury, five grains;
Opium, in powder, half a grain, every four hours;
The *nitre draught*, ordered on the 17th, to be resumed.

26. The urine is much increased in quantity; it is pale, and deposits neither mucus nor sediment. Tongue white; pulse 100; appetite pretty good. The severe pain from the elaterium is entirely gone. Medicines continued.

29. The calomel and opium distresses him; the mouth is not sore; it was, therefore, ordered to be discontinued. He has passed seven pints of urine within the last twenty-four hours, and the abdomen is less distended, and the man feels himself much better. Pulse 84. A bandage was ordered around the abdomen, as a support, and an *anodyne æther draught* was prescribed to be taken immediately.

July 7. The urine flows in an increased quantity; for the last three days he has resumed taking the *calomel pill* and the *nitrous draught*, every four hours, as before.

10. The mouth is affected by the *calomel* and *opium*; the urine flows in the same increased quantity, but is very high-coloured, and presents no deposit. The patient says that the abdominal swelling increases. The pill and draught were ordered to be omitted, and the following substituted:—

Nitrate of potash, fifteen grains;
Spirits of nitric æther, one drachm;
Tincture of squill, twenty minims;
Cinnamon water, one ounce. To be taken every four hours.
One grain of *opium* to be taken every night at bed-time.

12. The urine remains the same in quantity, but the abdominal distention has increased. The belly was ordered to be constantly fomented with *poppy decoction*, and the abdomen was to be tapped afresh to-morrow.

13. Upwards of thirty pints of clear serous fluid was drawn off, with some slight relief to the pressure and distention. An *anodyne æther draught* was taken immediately afterwards, and some *castor oil* desired to be exhibited on the following morning, if necessary.

14. The castor oil was taken this morning, and the bowels have been freely relieved. The urine has again increased in quantity; there is much pain on pressure over the right hypochondrium.

17. He feels much easier; the tongue is clean; the urine greatly increased in quantity. Since the last date he has been taking calomel and opium three times daily, with the usual nitre draught; the abdomen bears pressure over its whole surface, and he is quite free from pain.

20. He is much better; and, at his own urgent request, he was made an out-patient. His card was marked "relieved."

RESULT OF THE RE-VACCINATIONS PRACTISED IN THE PRUSSIAN ARMY DURING THE YEAR 1836.

During the course of this year, the number of troops vaccinated, amounted to 42,124; of this number there presented traces of previous vaccination:—

Doubtful	32,635
Evident	6,645
None	2,844

The result of the vaccinations was, to produce

A regular pock in	18,136
An irregular one in	9,940
No effect whatever in	14,048

These latter individuals were a second time submitted to vaccination,—

With effect in	1,569 cases
Without effect in	8,205

Of the above-mentioned individuals, re-vaccinated with effect in the year 1836, and earlier, there were attacked in the course of the year,—

With varicella	14
With varioloid	8
With true small-pock	0

From these tables it follows, that out of 42,124 individuals either vaccinated or re-vaccinated, during the year 1836, only 18,136 took a regular cow-pock. This proportion was one of the highest which had been obtained, and it is curious to observe how the proportion has been increasing for the last few years; thus, in 1833, out of 48,478 soldiers vaccinated, 15,209 took the pock, or about 31 in 100; in the year 1834, the proportion was 37 to 100; in 1835, it was 39; and in 1836, it amounted to 43. The result, as must be seen, was most satisfactory, for not one of these soldiers was even attacked with small-pox during the year.—*Med. Zeit. Berlin*, No. 20, 1837.

CURE OF

CONGENITAL CLUB-FOOT

BY

DIVISION OF THE TENDO-ACHILLIS.

To the Editor of THE LANCET.

SIR:—Having observed of late several cases recorded in THE LANCET, of deformities of the feet, cured by dividing the tendo achillis, I beg leave, in support of that very useful and simple operation, to publish my own case.

I laboured under contraction of the gastrocnemii muscles of my right leg from my earliest years. When standing erect, my heel was about an inch and a half from the ground; and when I walked, almost the only part of my foot that touched the ground was the ball of the little toe. I was obliged to use a stick, and suffered great uneasiness. I went to London, and placed myself under the care of Dr. Little. This gentleman, whose numerous operations of this nature have brought the subject of curing these deformities, *surgically*, fully under the notice of the profession, in your columns, suffered, as you are aware, from the same lameness, and had the operation of dividing the tendo achillis performed upon himself, by Dr. Stromeyer, in Hanover, the *true* inventor of the method, about fifteen months ago. Dr. Little, to whom I beg in this, the most public way in my power, to offer my grateful acknowledgements for his kindness and attention, while under his care, performed the operation in his usual skilful manner, on the 11th of August last. I sat upon a sofa, one assistant supported my knee, and another held my foot, and endeavoured to bend the ankle as much as possible, so as to render the tendon tense, while Dr. Little, resting one knee upon the floor, passed a narrow, curved bistoury across the tendon, between it and the deep vessels, nerves, and muscles, from within outwards, about two inches and a half above the os calcis, and divided it in withdrawing the instrument. As soon as the tendon was divided, it gave a crack, which was distinctly heard by all those around, and the separated ends of it could be easily felt with the fingers. The foot was bandaged, and allowed to remain at rest till the 14th, when the small puncture having cicatrised, the foot-board was applied to make the necessary extension. The heel came gradually down, and on the 17th, the foot was nearly at a right angle with the leg. A few days later, the foot was as much bent at the ankle-joint as that of the opposite limb. I have been walking about for the last four weeks. I find my limb acquiring both strength and substance, and the condition of the gastrocnemii and other muscles enables me to stand upon the limb, and move it in every natural direction. I may now say, that I am not only free from deformity, but enjoy an ease, freedom, and power in locomotion, such as it was never my lot to enjoy at any previous period of my existence. I consider it a duty I owe to Dr. Little, and to society, to request you will insert this concise statement in the next number of THE LANCET. I am, Sir, your most obedient servant,

THOMAS INGLIS, M.D.

178, George-street, Glasgow,
Oct. 3rd, 1837.

PROFESSORSHIP OF ANATOMY IN THE UNIVERSITY OF DUBLIN.

ON the point of going to press, we have learned that Dr. Harrison has been chosen to succeed Dr. Macartney in the Professorship of Anatomy and Surgery, in the University of Dublin.

TO CORRESPONDENTS.

The writer who has sent to us a request "on behalf of the medical profession" is informed that we have not the means of complying with his request. The application should be made to Mr. B. direct.

We have found it impossible to comply with the request of *Dr. G. H.* this week.

The publication of the letter of *Dr. H. Sorley* would subject us to an action for libel. Assuredly the Liverpool bladder case does not require another word, either of explanation or of comment. If, however, Dr. Sorley is desirous of publishing a *short* exposition of the facts of the case, as they fell under his own observation, free from the objectionable passages contained in his present communication, we would give it a place in our pages. Still, we are decidedly of opinion that the merits and the demerits of the case have been sufficiently discussed.

A Candidate. Sir Wm. Burnett. There is no fee.

The letters of *Mr. Hedley*, *Mr. R. Hunt*, and *Amicus Justitiæ*, next week.

We would insert with pleasure the letter of *W. M. C.*, did it develop any new views on the subject of medical education. The writer understands the question and treats it properly, but the same sentiments have already often been submitted to public view in the pages of this Journal.

The communication of *Dr. Hancock* has already been printed, we understand, in another form.

Mr. DENDY is preparing for publication a work on the diseases of the skin, the external signs of disorder, and the constitutional peculiarities of children.